REPORTABLE

INFECTIOUS DISEASES

IN

KANSAS

2000 SUMMARY

October, 2001

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INTRODUCTION

Purpose and format of this report

This is the ninth annual summary of reportable diseases by the Kansas Department of Health and Environment (KDHE). The purpose of the report is to provide useful information on notifiable infectious diseases in Kansas for health care providers, public health workers and policy makers.

The report is divided into two sections. Section I presents summaries of 33 reportable diseases or conditions of public health importance in Kansas. Each of the diseases or conditions is presented with a brief overview of the disease, laboratory tests commonly used for diagnostics, and the surveillance case definition. A summary of the disease in Kansas including key statistics and trends is supplemented by tables and graphs. Only new cases meeting a surveillance definition for a confirmed case are presented here, as reported by February 28, 2001. Rates have been calculated from 1999 census estimates (the most recent available data) to adjust for population size and allow for more meaningful interpretation of the data. Rates by demographic characteristics and proportional changes from 1999 are reported only when there were more than 50 cases of a disease reported in the state. Whenever possible, information on disease trends for the United States has been included for comparison with Kansas trends. If the total number of cases in the state was less than 5, then only limited demographic information is presented (to ensure confidentiality of the patients).

Disease incidence for urban and rural areas has been included for many diseases. Urban counties were defined as counties with a population density of 150 or more persons per square mile, and represent the four largest metropolitan areas in the state [Kansas City (Johnson and Wyandotte Counties), Wichita (Sedgwick County), Topeka (Shawnee County), and Lawrence (Douglas County)], which account for 49% of the population in the state. The remaining 100 counties in the state are classified as rural for the purposes of this report.

Data concerning race and ethnicity were collected uniformly for most diseases as follows: Race - American Indian/Alaska Native, Asian/Pacific Islander, Black, White and Ethnicity - Hispanic, non-Hispanic (regardless of race). For AIDS/HIV, STD, and TB, information were collected using one variable combining race and ethnicity as American Indian/Alaska Native, Asian/Pacific Islander, Black non-Hispanic, White non-Hispanic, or Hispanic. Additionally, although the recommended standard for classifying a person's race or ethnicity is based on self-reporting, this might not always be followed.

Section II provides the list of reportable diseases during 2000, a summary of cases of selected conditions by year for 1991-2000, and a summary of cases by county for 2000. Also included are a list of county abbreviations for use with Table 2, a map of Kansas with county names, and a list of publications on disease control from KDHE in 2000.

Disease reporting in Kansas

Selected diseases are reportable by law in Kansas by health care providers, laboratories and hospitals (Section II, Table 1). Reports of infectious diseases are usually first sent to the local health department, which is responsible for providing basic public health interventions

such as providing immune globulin to a household contact of a person with hepatitis A or treating sexual contacts of a person with gonorrhea.

Reports are then sent to the Bureau of Epidemiology and Disease Prevention in the Kansas Department of Health and Environment for review. After reports have been entered into the Kansas Integrated Electronic Disease Surveillance System (HAWK), weekly summaries are forwarded to the Centers for Disease Control and Prevention (CDC) for inclusion in the Morbidity and Mortality Weekly Report. The final step in the surveillance system occurs when CDC sends selected data to the World Health Organization.

HAWK is a central, statewide database of reportable diseases which can be accessed remotely by authorized public health officials via secure Internet connections. Remote users can report disease occurrence more efficiently and can also generate summary statistics and some reports to assist them in evaluating the overall effectiveness of public health efforts in their areas.

Surveillance for influenza follows a different model. During 2000-2001 influenza season, twenty physicians participated in the statewide sentinel physician-based active surveillance system. Offices were contacted weekly by telephone to determine the number of patients seen with influenza-like illness by four age groups and total patient visits for all reasons. Influenza-like illness is defined as fever ($100 °F [37.8 °C], oral or equivalent) *AND* cough or sore throat. To compare regional activity, aggregate information from Kansas is sent weekly to CDC. This system plays a key role to monitor influenza in the United States.

In October 1990, in collaboration with Council of State and Territorial Epidemiologists (CSTE), CDC published Case Definitions for Public Health Surveillance to provide uniform criteria for reporting cases to increase the specificity of reporting and improve the comparability of diseases reported from different geographic areas. The CDC/CSTE surveillance case definitions use a combination of clinical, laboratory, and epidemiologic criteria to define cases. Those case definitions were revised in 1997 and can be found at http://www.cdc.gov/mmwr/preview/mmwrhtml/00047449.htm.

The usefulness of public health surveillance data depends on its uniformity, simplicity, and timeliness. The case definitions contained in this report follow the CDC/CSTE surveillance definitions for disease reporting and should not be confused with clinical diagnoses. Use of additional clinical, epidemiologic, and laboratory data may enable a physician to diagnose a disease even though the formal, standardized surveillance case definition may not be met.

Important disease trends in 2000

Among vaccine-preventable diseases, there were two confirmed cases of measles in Kansas, the first since 1996; however nationwide, measles remained at low levels. The two Kansas cases were unrelated, and were probably acquired outside our state. The number of reported confirmed pertussis cases declined in 2000 compared to the previous 3 years, but pertussis remains the vaccine-preventable disease with the highest number of reported cases. Tetanus remained at low levels. Reported cases of acute hepatitis B have steadily declined since 1991 when vaccine use became more widely available. There were no reported cases of diphtheria,

mumps, polio, or rubella. The U.S. has been considered polio free since 1979.

The number of reported primary and secondary syphilis cases continues to decline in Kansas. In 1999, the Sexually Transmitted Disease (STD) Program received 14 reports of primary and secondary syphilis, and in 2000, the STD Program received 6 reports of primary and secondary syphilis. Syphilis cases continue to be concentrated in urban regions of the state. Syphilis remains important because of its potential for elimination, its capacity for transplacental transmission to infants, and its role as a risk factor for HIV infection and transmission. In 2000, one case of congenital syphilis was reported and two reported cases of secondary syphilis were found to be infected with HIV.

The incidence of gonorrhea continues to increase with 2,795 cases reported in 2000 paralleling national trends. Young adults age 20-24 and adolescents age 15-19 have higher rates of infection than the other age groups. Like syphilis, gonorrhea is concentrated in urban areas of the state.

Chlamydia remains the most frequently reported sexually transmitted disease in Kansas and 6,057 cases were reported in 2000, which was a decrease from the previous year. In contrast to syphilis and gonorrhea, chlamydia is more widely distributed geographically. Over 80% of reported cases occur among females. This gender disparity reflects the focus of chlamydia detection activities in the state which target females.

Among reported cases of these three major bacterial STDs racial and ethnic minorities are disproportionately represented, which mirrors national trends. This may reflect reporting bias (e.g., African-Americans may use public STD clinics more often for health care and be more likely to be screened or reported if positive). Both syphilis and gonorrhea infections are largely confined to the urban areas of the state, while at least one case of chlamydia occurred in 98 of 105 counties in Kansas. This distribution also reflects national trends. The majority of syphilis cases are reported from public STD clinics, whereas chlamydia and gonorrhea infections are reported from private physicians. Nearly 66% of reported bacterial STD reports are from private providers rather than publicly funded STD and family planning clinics.

The number of reported Kansas AIDS cases decreased from 1999 through 2000, as did the numbers for most other states. Male-to-male sex continues to be the leading risk behavior. Beginning July 1, 1999, positive HIV test results were also reported confidentially to the KDHE from physicians and laboratories. The percentage of cases reported with no know risk factor is higher than for AIDS cases (20% and 11% respectively in 2000), but it is not unexpected. However, many cases are reclassified into known risk categories after further investigation.

Kansas reported 77 cases of active tuberculosis (TB) disease in 2000, up from 69 cases of active TB in 1999. During 2000, the state's major metropolitan areas were home to the most reported cases of TB. Sedgwick county again reported the highest number of new cases of TB disease in 2000, with 28. Two metropolitan Kansas counties reported noteworthy increases during 2000: Johnson reported 12 cases, up from five in 1999, and Wyandotte reported 11 cases, up from four in 1999. There were two cases of TB-HIV co-infection, as compared with three cases in 1999. There were no reported cases of multi-drug resistant TB (MDR-TB) in Kansas again

in 2000.

Enteric infections (salmonellosis, shigellosis and giardiasis) continued to be reported in large numbers. The number of cases of shigellosis almost tripled, primarily because of a sustained outbreak in the Kansas City area. Twelve foodborne outbreaks of gastro-intestinal illness were reported and formally investigated by Epidemiologic Services during 2000. Two of the food-related illness outbreaks were attributed to *Salmonella spp.* (serotypes Group B and *newport*), and two to norwalk-like virus. No causative agent was positively identified in the remainder of food related illness.

In 2000, all enerohemorrhagic, enteropathogenic and enteroinvasive *E. coli*, ehrlichiosis, all cases of viral hepatitis (acute and chronic), listeriosis, streptococcal invasive disease (Group A *streptococcus* or *Streptococcus pneumoniae*), and varicella (chickenpox) deaths became reportable conditions in Kansas.

Interpreting the data

When interpreting the data in this report it is important to remember that disease reporting is incomplete and often varies by disease. For example, reporting of AIDS cases is estimated to be 90% complete whereas reporting of salmonellosis is estimated to be 3-5% complete. Absolute numbers are less meaningful than trends when interpreting the data. However, trends can be influenced by changes in case definitions, in reporting patterns, or by random fluctuations. It is also important to note that since 59% (62/105) of counties in Kansas have populations less than 10,000, it is possible to have high rates of disease in these counties even if only very few cases are reported.

Acknowledgments

We would like to thank all the physicians, physician assistants, nurses, hospitals, laboratorians, county health department staff, and others who participated in reportable disease surveillance during 2000. We would also like to acknowledge the Bureau of Epidemiology and Disease Prevention staff for their support.

Useful web sites

This report, Reportable Diseases in Kansas, annual summary, is available on the internet at: **www.kdhe.state.ks.us/epi**

Health education facts sheets and brochures that address public health can be found at:
www.kdhe.state.ks.us/health-info

Kansas County Health Profile, 1999
www.kdhe.state.ks.us/olrh/index

AIDS/STD:
www.kdhe.state.ks.us/hiv-std

Immunization:
www.kdhe.state.ks.us/immunize

Influenza:
www.cdc.gov/ncidod/dieases/flu/weekly.htm

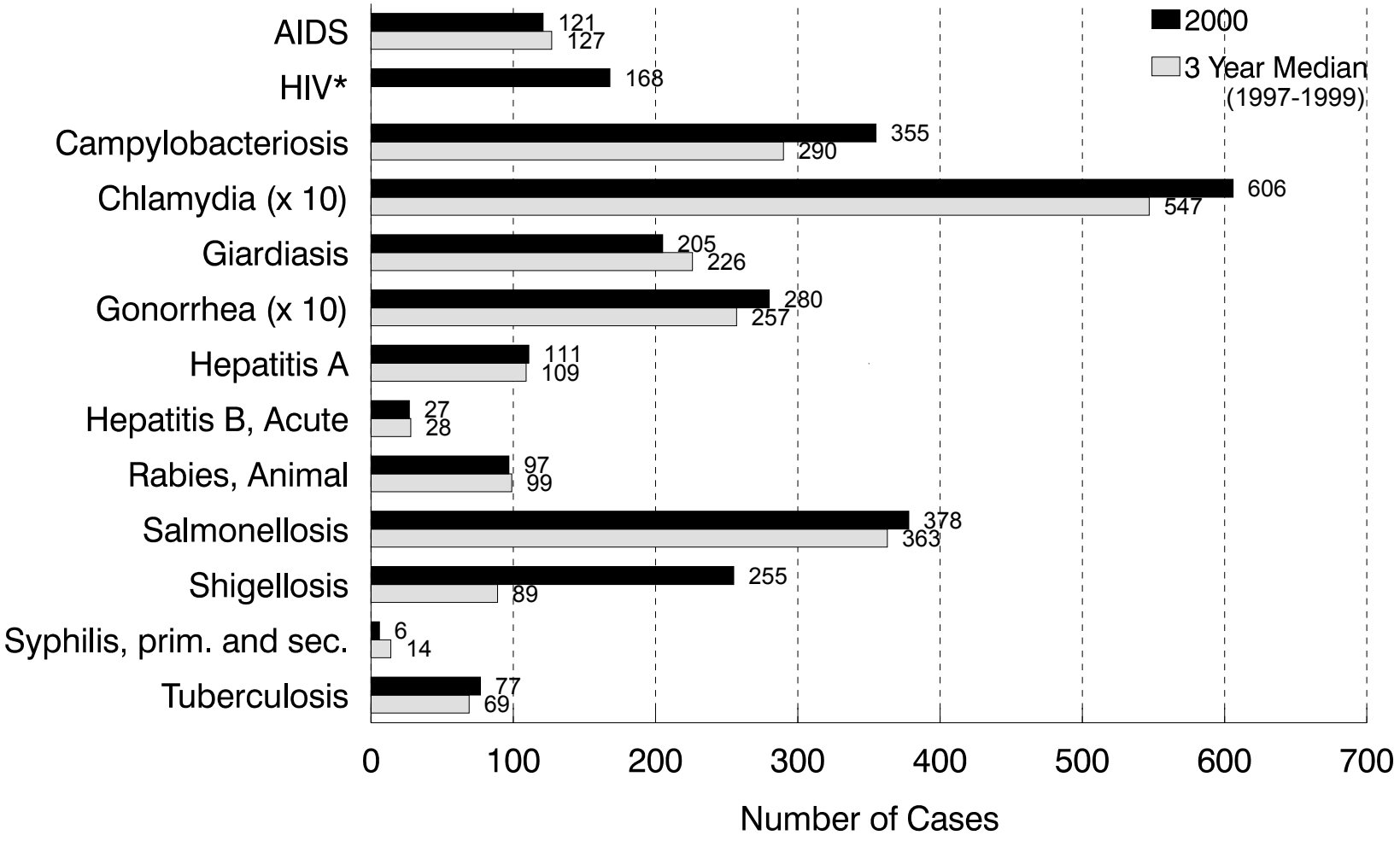
International Travel:
www.cdc.gov/travel

Lead:
www.kdhe.state.ks.us/lead

TB:
www.kdhe.state.ks.us/tb

Vaccines:
www.cdc.gov/od/nvpo/main.htm

Selected Reportable Diseases in Kansas, 2000



*HIV became reportable in Kansas July, 1999.

SECTION I

DISEASE

SUMMARIES

ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS) AND HUMAN IMMUNODEFICIENCY VIRUS INFECTION (HIV)

AIDS is a severe, life-threatening condition which was first recognized as a distinct syndrome in 1981. It is caused by a virus, human immunodeficiency virus (HIV), that damages the body's immune system and destroys its ability to fight illness. AIDS itself doesn't kill the patient; rather it allows other infections and diseases to invade the body, and it is those opportunistic diseases that kill. Most people infected with HIV develop detectable antibodies within 1-3 months after infection, but may remain free of signs or symptoms for several months to years. Clinical illness may include lymphadenopathy, chronic diarrhea, weight loss, fever, and fatigue. The severity of HIV-related illness is, in general, directly related to the degree of immune dysfunction. The disease can be transmitted from person to person through unprotected sexual contact, sharing HIV-contaminated needles and syringes, from mother to infant, and transfusion of infected blood or its components. No vaccine exists for HIV infection, but considerable progress has been made in the development of antiretroviral therapies which slow viral progression and significantly reduce the amount of virus in an infected person.

HIV infection and AIDS are reportable in Kansas. A person previously reported as HIV infected is reported again as an AIDS case if an AIDS diagnosis is made.

Laboratory Criteria for Surveillance Purposes

- AIDS: Detection of either a) CD4+ T-lymphocytes/:L <200; b) a CD4+ T-lymphocyte percentage of total lymphocytes of <14%; or c) any of 24 specific diseases or syndromes.

C HIV infection: Western blot confirmed (positive/reactive) antibody test, HIV p24 antigen test, HIV nucleic acid (DNA or RNA) detection, HIV isolation (viral cultures).

Surveillance Case Definitionss

AIDS:
- All HIV-infected adolescents aged $13 years and adults who have either (a) a CD4+ t-lymphocyte count <200 or <14% or (b) been diagnosed with one of the AIDS defining opportunistic infections. Complete information on the case definition can be found in MMWR 1997; 46 (No. RR-10).
- The AIDS surveillance case definition for children aged <13 years includes the clinical conditions listed in the AIDS surveillance case definition found in MMWR 1997; 46 (No. RR-10).

HIV:
- Laboratory criteria must be met.

Note:

- The case definitions for adult and pediatric HIV infection has been expanded effective 1/1/2000. It includes HIV nucleic acid (DNA or RNA) detection tests (viral load tests) that were not available when the AIDS case definition was revised in 1993. The revised HIV case definitions in adults and children are outlined in MMWR 1999; 48 (No. RR-13: 1-31).

- More detailed information on AIDS is available in the Kansas AIDS/STD Update, the "HIV/AIDS Epidemiologic Profile", and www.kdhe.state.ks.us/hiv-std.

Epidemiology and Trends

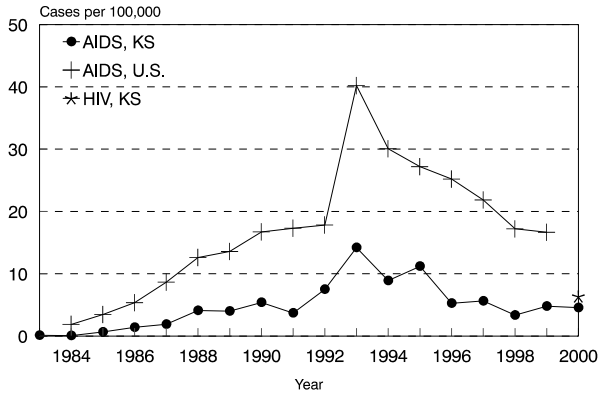
AIDS

2000 Case Total	121
Kansas rate	4.6 per 100,000
U.S. rate (1999)	16.7 per 100,000
Rate by gender	
Female	1.5 per 100,000
Male	7.7 per 100,000
Rate by race/ethnicity	
White	2.9 per 100,000
African-American	21.6 per 100,000
Asian/Pacific Islander	2.1 per 100,000
Native American	4.2 per 100,000
Hispanic	9.4 per 100,000
Rate by geographic area	
Urban	6.9 per 100,000
Rural	2.2 per 100,000

In 2000, 121 cases of AIDS were reported in Kansas, reflecting a 5% decrease from the 127 cases reported in 1999 and continuing a decrease in reported cases since 1995. There were seven reported deaths (6%) in 2000 and nine (7%) in 1999. Not all deaths among AIDS cases were results of HIV infection.

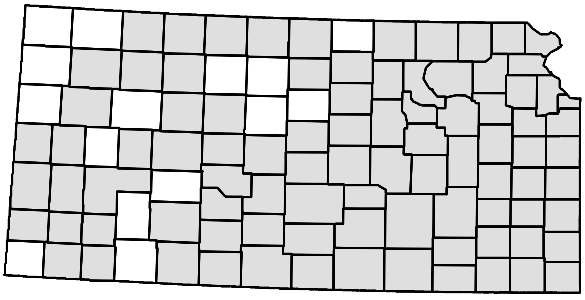
The cases ranged in age from 10 to 68 years of age; the median age was 37 years. The majority of AIDS cases in 2000 were in males (83%). Non-Whites, who represent less than 10% of the state's population, accounted for 42% of AIDS cases in 2000. The most populous county, Sedgwick, had the largest number of cases (31%). The four largest metropolitan area which account for 49% of the state population, comprised 75% of the total number of cases.

AIDS/HIV incidence rate by year of report
Kansas, 1983-2000



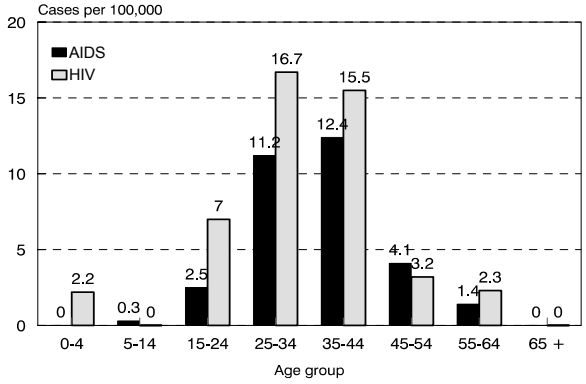
Comment: The introduction of a new case definition accounts for the large number of cases in 1993.

Counties affected by AIDS/HIV
Kansas, diagnosed 1981-2000



Shaded counties have reported or treated at least one person with AIDS or HIV

AIDS/HIV rate by age group
Kansas, 2000



Of the 121 cases reported in 2000, 101 were men and 20 were female. Men who have sex with men (MSM) account for the largest number of AIDS cases (46%), followed by cases attributable to high risk heterosexual contact* (18%), injection drug use (13%), and injection drug use with homosexual contact (7%). The most common risk factor among women was high risk heterosexual contact (60%), and among men unprotected male to male sexual contact (56%). One pediatric case was reported and hemophilia/coagulation disorder was reported as the mode of transmission.

HIV

2000 Case Total	168
Kansas rate	6.3 per 100,000
U.S. rate (1999)	N/A
Rate by gender	
Female	2.2 per 100,000
Male	10.6 per 100,000
Rate by race/ethnicity	
White	4.2 per 100,000
African-American	24.8 per 100,000
Asian/Pacific Islander	2.1 per 100,000
Hispanic	10.1 per 100,000
Rate by geographic area	
Urban	9.3 per 100,000
Rural	3.4 per 100,000

Data presented on HIV **DO NOT** include information on individuals that were diagnosed with AIDS during the same period; information on those individuals is analyzed and presented separately.

Beginning July 1, 1999, all confirmed positive HIV test results reported confidentially included the name of the person tested, and demographic information. Anonymous tests are available at public counseling and testing sites.

In 2000, there 168 HIV cases including four deaths were reported. The deaths were not related to HIV infections. The cases ranged in age from 1 to 63 years of age; the median age was 34 years. Males comprised 83% of HIV cases. Non-Whites, who represent less than 10% of the state's population, accounted for 39% of HIV cases in 2000. The highest number of reports were for individuals living in areas with highest population density (i.e., Johnson, Shawnee, Sedgwick, and Wyandotte counties).

Of the 168 cases reported, 139 were male and 29 were female. Men who have sex with men account for the largest number of HIV cases (45%), followed by cases attributable to high risk heterosexual contact (15%), and injection drug use (13%). The most common risk factor among women was high risk heterosexual contact* (48%), and among men unprotected male to male sexual contact (53%). Two pediatric cases were reported and were born to women in Kansas who had HIV.

*High risk heterosexual contact is sex between a male and a female. It is defined as the risk behavior of unprotected sex with a bisexual male, injection drug user, or person known to be HIV positive.

AMEBIASIS

Amebiasis is an infection with the protozoan parasite *Entamoeba histolytica*. Most infections are asymptomatic but may become clinically important under certain circumstances such as with a liver abscess. Intestinal disease varies from acute or fulminating dysentery with fever, chills, and bloody or mucoid diarrhea (amebic dysentery), to mild abdominal discomfort with diarrhea containing blood or mucus alternating with periods of constipation or remission. The incubation period varies from a few days to several months or years; commonly 2-4 weeks. Transmission occurs mainly by ingestion of fecally contaminated food or water containing amebic cysts, or sexually by oral-anal contact. The cysts are relatively chlorine resistant and are not reliably killed by routine drinking water chlorination processes, but sand or diatomaceous earth filtration removes all cysts.

Laboratory Criteria for Surveillance Purposes

Intestinal amebiasis:

- Demonstration of *E. histolytica* cysts or trophozoites in stool, ***or***
- Demonstration of trophozoites in tissue biopsy or ulcer scrapings by culture or histopathology.

Extraintestinal amebiasis:

- Demonstration of *E. histolytica* trophozoites in extraintestinal tissue.

Surveillance Case Definitions

- *Confirmed,* ***intestinal*** *amebiasis:* clinically compatible illness that is laboratory confirmed.

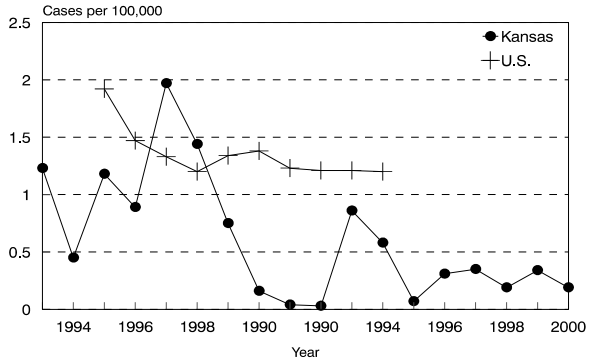
- *Confirmed,* ***extraintestinal*** *amebiasis:* a parasitologically confirmed infection of extraintestinal tissue, or among symptomatic persons (with clinical or radiographic findings consistent with extraintestinal infection), demonstration of specific antibody against *E. histolytica* as measured by indirect hemagglutination or other reliable immunodiagnostic test (e.g., enzyme-linked immunosorbent assay).

Note: Amebiasis is not a nationally notifiable disease.

Epidemiology and Trends

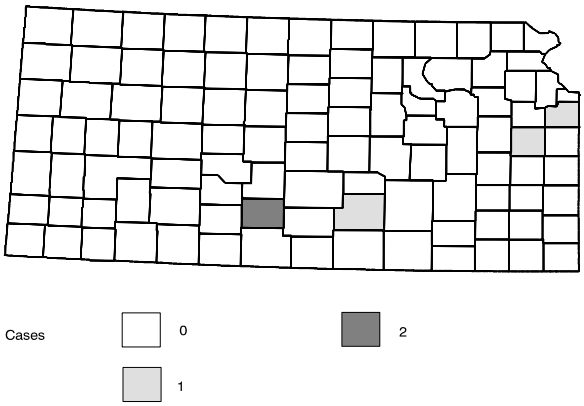
2000 Case Total	5
Kansas rate	0.2 per 100,000
U.S. rate (1999)	N/A
Cases by gender	
Female	4
Male	1
Cases by geographic area	
Urban	2
Rural	3

Amebiasis incidence rate by year of report
Kansas, 1983-2000



Seventy-seven cases of amebiasis were reported in Kansas for the ten year period 1991-2000. The largest number of cases was reported in 1993, 22 (33%); these were sporadic cases, no outbreaks were reported. In 2000, five cases were reported, a 44% decrease from 9 cases in 1999. The three-year median for 1997-1999 was 9 cases. The cases ranged in age from 3 to 33 years with a median age of 30.

Amebiasis cases by county
Kansas, 2000



BRUCELLOSIS

Brucellosis is a systemic bacterial disease caused by *Brucella spp.**, a small Gram negative cocco-bacilli. Humans are susceptible to *B. melitensis, B. suis, B. abortus* and *B canis*. Several animals are reservoirs, including cattle, sheep, goats, pigs, bison, elk, deer, caribou, and dogs. Humans are accidental hosts. Brucellosis is a disease that has been nearly eliminated in the U.S. because of vigorous animal health control measures and milk pasteurization. It is most likely to be found in people associated with livestock. In humans, it is characterized by acute or insidious onset of intermittent or irregular fever, chills, profuse night sweats, weakness, profound fatigue, and weight loss. Other common symptoms include insomnia, impotence, constipation, anorexia, headache, arthralgia and general malaise. Lympadenopathy, splenomegaly, and hepatomegaly are common, but jaundice is rare. Symptoms can last for weeks or months to years or more if not adequately treated and diagnosis can be difficult. In animals, the organism has a affinity for the reproductive organs with abortions or epididymitis and orchitis as presenting signs. Fatalities are rare. The incubation period is highly variable and difficult to ascertain; it is usually 5-60 days, but occasionally may be several months. Bacteria is found in unpasteurized milk from diseased cows and also from discharges from animals that abort their fetus from the disease. Transmission is from contact, ingestion and aerosolization of the organism. It can also be acquired from self-inoculation of some vaccine strains. There is no person to person transmission.

Laboratory Criteria for Surveillance Purposes

- Isolation of *Brucella* sp. from a clinical specimen, *or*
- Fourfold or greater rise in *Brucella* agglutination titer between acute- and convalescent-phase serum specimens obtained $\geq$2 weeks apart and studied at the same laboratory, *or*
- Demonstration by immunofluorescence of *Brucella* sp. in a clinical specimen.

Surveillance Case Definitions

- *Confirmed:* a clinically compatible case that is laboratory confirmed.
- *Probable:* a clinically compatible case that is epidemiologically linked to a confirmed case or that has supportive serology (i.e., Brucella agglutination titer of $\geq$160 in one or more serum specimens obtained after onset of symptoms)

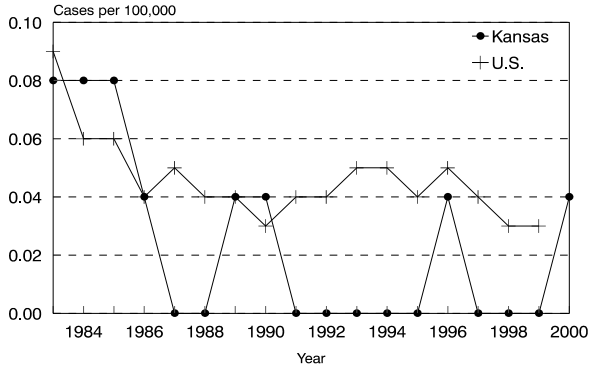
NOTE: *This organism is a potential bioterrorist agent, but is not known to have been deployed as such. Cases suspected of being linked to bioterrorist activities should be immediately reported to 1-877-427-7317.

Epidemiology and Trends

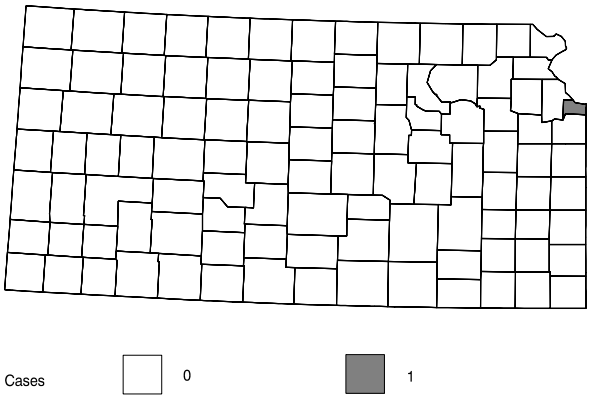
2000 Case Total	1
Kansas rate	<0.1 per 100,000
U.S. rate (1999)	<0.1 per 100,000

Two cases of Brucellosis were reported between 1991-2000 in Kansas. One brucellosis case was reported in 2000 and was associated with foreign travel.

Brucellosis rate by year of report
Kansas, 1983-2000



Brucellosis cases by county
Kansas, 2000



CAMPYLOBACTERIOSIS

Campylobacteriosis is an acute enteric disease caused by the bacteria *Campylobacter jejuni* and, less commonly, *C. coli*. It is characterized by diarrhea, abdominal pain, malaise, fever, nausea and vomiting. The illness is frequently over within 2-5 days. Prolonged illness and relapses may occur in adults. Rarely, some long-term consequences can result from a *Campylobacter* infection. Some people may have arthritis following campylobacteriosis; others may develop a rare disease that affects the nerves of the body beginning several weeks after the diarrheal illness. This disease, called Guillain-Barré syndrome, occurs when a person's immune system is "triggered" to attack the body's own nerves, and can lead to paralysis that lasts several weeks and usually requires intensive care. It is estimated that approximately only one in every 1000 reported campylobactoeriosis cases leads to Guillain- Barré syndrome. As many as 40% of Guillain- Barré syndrome cases in this country may be triggered by campylobacteriosis. The mode of transmission is by ingestion of the organisms in undercooked poultry or pork, contaminated food and water, or raw milk; from contact with infected pets (especially puppies and kittens), farm animals or infected infants. Contamination of milk most frequently occurs from feces of carrier cattle; people and food can be contaminated from poultry, especially from common cutting boards. Person-to-person transmission appears to be uncommon with *C. jejuni*.

Laboratory Criteria for Surveillance Purposes

- Isolation of *Campylobacter* from any clinical specimen.

Surveillance Case Definitions

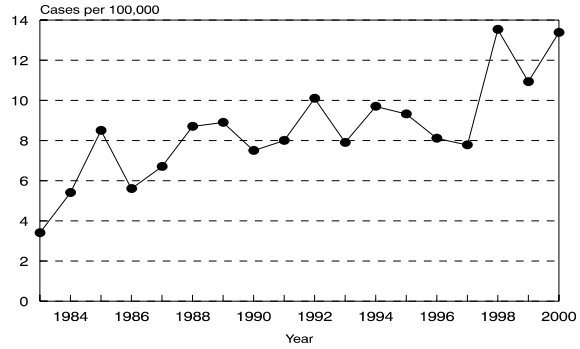
- *Confirmed:* a case that is laboratory confirmed.
- *Probable:* a clinically compatible case that is epidemiologically linked to a confirmed case.

Epidemiology and Trends

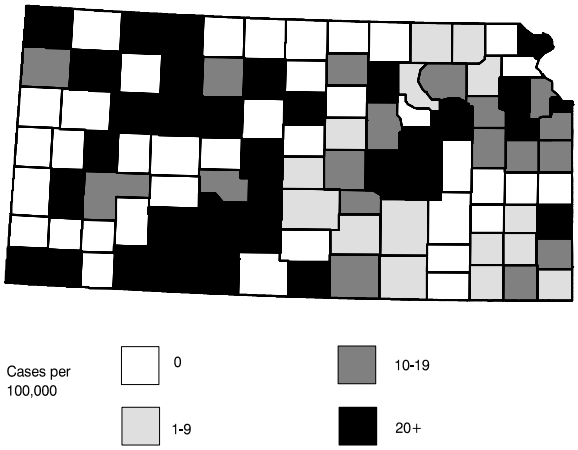
2000 Case Total	355
Kansas rate	13.4 per 100,000
U.S. rate	N/A
Rate by gender	
Female	11.1 per 100,000
Male	15.0 per 100,000
Rate by race	
White	9.4 per 100,000
African-American	5.7 per 100,000
Asian/Pacific Islander	12.6 per 100,000
Rate by ethnicity	
Hispanic	11.5 per 100,000
Non-Hispanic	7.8 per 100,000
Rate by geographic area	
Urban	13.6 per 100,000
Rural	13.1 per 100,000

Campylobactoriosis is one of the most commonly reported gastrointestinal illnesses in Kansas. In 2000, 355 cases were reported, a 22% increase over the 290 cases reported in 1999. The three-year median for 1997-1999 was 290 cases. No outbreaks were reported in 2000. The cases ranged in age from less than 1 year to 87 years of age. The median age was 35 years and the highest incidence rate occurred in those under 5 years of age (26.1/100,000); 55% of the cases were in males. Sixty-five percent of cases were Whites, 4% African-Americans, 2% Asian/Pacific Islanders, and in 31% of cases race was not reported. The ratio of cases reported from rural areas to urban areas was about 1:1. A serotype was known for 58% (205) of the cases reported. *C. jejuni* (96%, 197 cases) was the predominant serotypes, followed by *C. coli* (4%, 8 cases).

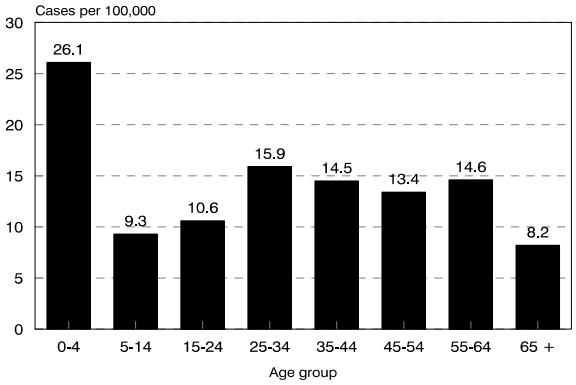
Campylobacteriosis incidence rate by year
Kansas, 1983-2000



Campylobacteriosis rate by county
Kansas, 2000



Campylobacteriosis rate by age group
Kansas, 2000



CHLAMYDIA

Chlamydia trachomatis is a sexually transmitted genital infection which is manifested in males primarily as a urethritis, and in females as a mucopurulent cervicitis. Asymptomatic infections are common. Clinical manifestations of urethritis are often difficult to distinguish from gonorrhea and include mucopurulent discharges of scanty or moderate quantity, urethral itching, and burning on urination. The incubation period is poorly defined, probably 7-14 days or longer. Complications of chlamydia in males include epididymitis that can lead to sterility. Individuals who engage in receptive anorectal intercourse may develop chlamydia proctitis. Common complications in women include salpingitis and chronic infection of the endometrium and fallopian tubes. These complications can lead to infertility and ectopic pregnancies. Endocervical chlamydia infection has been associated with increased risk of HIV infection. Perinatal infections may result in inclusion conjunctivitis and pneumonia in newborns.

Laboratory Criteria for Surveillance Purposes

- Isolation of *C. trachomatis* by culture ***or***
- Demonstration of *C. trachomatis* in a clinical specimen by detection of antigen or nucleic acid.

Surveillance Case Definitions

- *Confirmed:* a case that is laboratory confirmed.
- *Probable:* a written morbidity report of chlamydia submitted by a physician.

Comment

- Chlamydia became reportable in 1985 in Kansas. State-wide screening began in 1990, targeting females #29 years of age. In July of 1995, the screening criteria were amended, and current guidelines, recommended by the Region VII Infertility Prevention Project (which includes Iowa, Kansas, Missouri, and Nebraska), are to screen the following individuals: (1) all female STD clinic patients, (2) in family planning clinics, all females #24 years old, and females $25 years old with one of the following characteristics: contact to an STD, symptoms suggesting an STD, and/or a new sexual partner since last exam. In addition, prenatal clinics screen all clients upon initial exam.
- More detailed information on STDs in Kansas is available at: www.kdhe.state.ks.us/std.

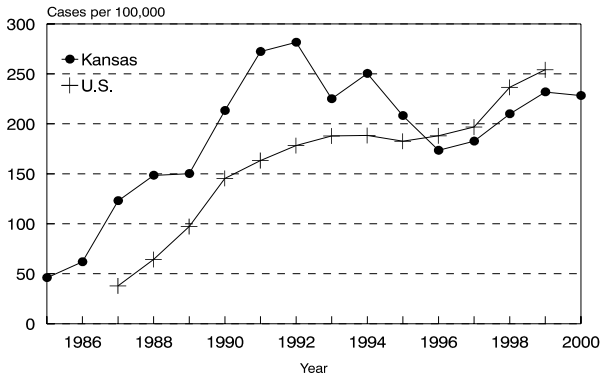
Epidemiology and Trends

2000 Case Total	6,057
Kansas rate	228.2 per 100,000
U.S. rate (1999)	254.1 per 100,000
Rate by gender	
Female	368.8 per 100,000
Male	83.0 per 100,000
Rate by race/ethnicity	
White	120.6 per 100,000
African-American	1275.6 per 100,000
Asian/Pacific Islander	154.9 per 100,000
Native American	237.8 per 100,000
Hispanic	517.9 per 100,000
Rate by geographic area	
Urban	292.7 per 100,000
Rural	165.2 per 100,000

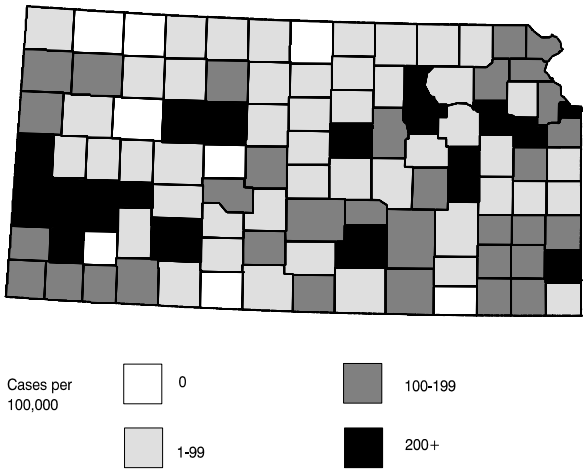
Chlamydia trachomatis continued to be the most frequently reported sexually transmitted disease in Kansas, with 97 of 105 counties reporting at least one case in 2000. A total of 6,057 chlamydia infections were reported during 2000, higher than the three-year median (for 1997-1999) of 5,446. This number was virtually unchanged from the 6,093 cases reported in 1999. There has been an upward trend since 1995, but the Kansas rate has remained below the national rate during the time.

The cases ranged in age from 1 to 98 years with a median age of 20. Females accounted for 82% of the reported cases and 79% of all reported cases in 2000 occurred in the 15-24 age group. This figure may reflect the focused screening efforts among women. Whites account for more cases than any other race but the case rates for

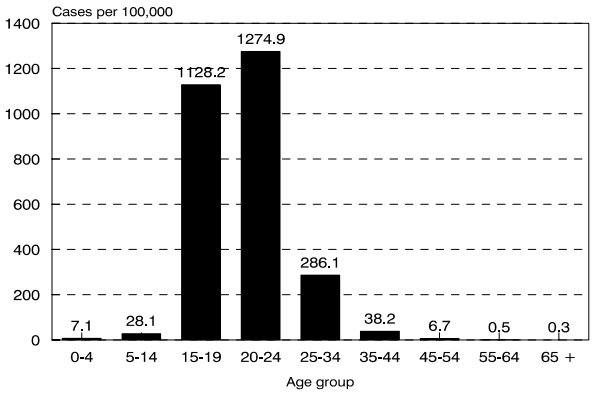
Chlamydia incidence rate by year
Kansas, 1985-2000



Chlamydia rate by county
Kansas, 2000



Chlamydia rate by age group
Kansas, 2000



other races is higher than whites. Members of the African-American population were disproportionately affected by chlamydia during 2000. This may reflect reporting bias, as described in the introduction. The largest number of cases and highest rates occurred in the four largest metropolitan areas which accounted for 63% of the cases.

In 2000, a total of 41,972 tests were performed by Kansas Health and Environmental Laboratory, Sedgwick and Wyandotte County laboratories with an overall chlamydia positivity rate of 4.5% (1,899/41,972).

CRYPTOSPORIDIOSIS

Cryptosporidiosis is caused by the parasite *Cryptosporidium parvum*. Illness is characterized by diarrhea, abdominal cramps, loss of appetite, low-grade fever, nausea, and vomiting. Symptoms often wax and wane but disappear in less than 30 days in most immunologically healthy people and infected persons may be asymptomatic. The disease can be prolonged and life-threatening in severely immunocompromised persons. Incubation period is not precisely known, but 1-12 days is the likely range. The source of the infection is usually stools from infected individuals or animals. It is spread by fecal-oral contact. Hands can become contaminated with parasites when a person changes the diaper of an infant with cryptosporidiosis or from improper hand washing after toileting. Pets, farm animals, and unpasteurized milk can also transmit the parasite. Outbreaks have been associated with drinking contaminated water, bathing in contaminated swimming pools and lakes, and drinking unpasteurized apple cider. Normal water chlorination processes are not effective against the oocyst form of the parasite. Heating water to 45°C (113 °F) for 5-20 minutes, 60 °C (140 °F) for 2 minutes, or chemical disinfection with 10% formalin or 5% ammonia solution is effective.

Laboratory Criteria for Surveillance Purposes

- Demonstration of *Cryptosporidium* oocysts in stool, ***or***
- Demonstration of *Cryptosporidium* in intestinal fluid or small-bowel biopsy specimens, ***or***
- Demonstration of *Cryptosporidium* antigen in stool by a specific immunodiagnostic test (e.g., enzyme-linked immunosorbent assay).

Surveillance Case Definitions

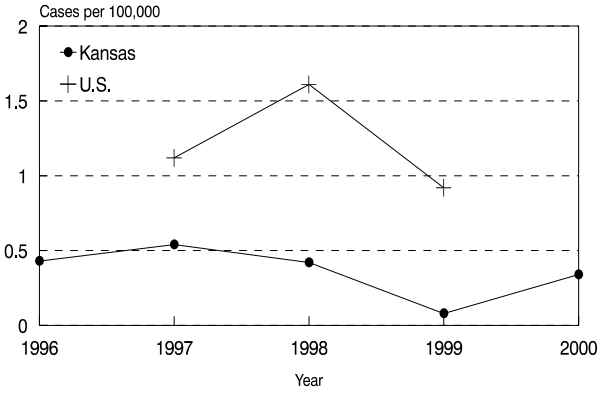
- *Confirmed:* a case that is laboratory confirmed.
- *Probable:* a clinically compatible case that is epidemiologically linked to a confirmed case.

Epidemiology and Trends

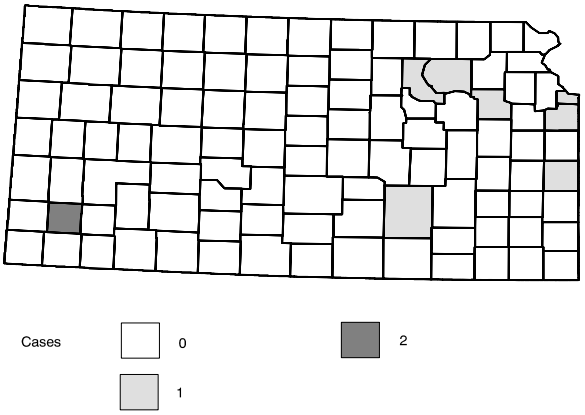
2000 Case Total	9
Kansas rate	0.3 per 100,000
U.S. rate (1999)	0.9 per 100,000
Cases by gender	
Female	3
Male	6
Cases by geographic area	
Urban	3
Rural	6

Cryptosporidiosis has been a reportable disease in Kansas since 1996. The three-year median for 1997-1999 was 11 cases. The largest number of cases (31) was reported in 1995; twenty-four cases were related to an outbreak associated with a swimming pool. In 2000, there were 9 cases of cryptosporidiosis reported in Kansas, up from 5 cases in 1999. The cases ranged in age from 1 to 65 years with a median age of 12.

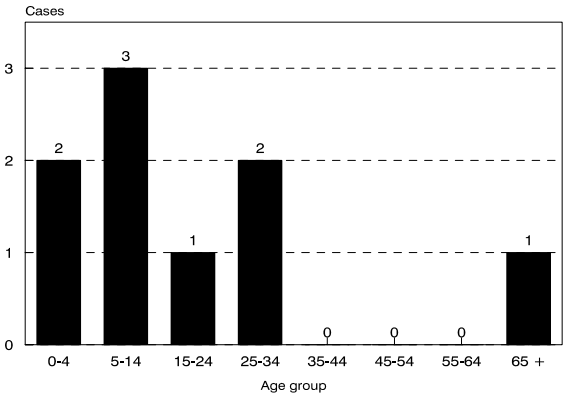
Cryptosporidiosis incidence rate by year
Kansas, 1996-2000



Cryptosporidiosis cases by county
Kansas, 2000



Cryptosporidiosis cases by age group
Kansas, 2000



ENCEPHALITIS, INFECTIOUS

Infectious encephalitis is an acute inflammatory process of short duration involving parts of the brain, spinal cord and meninges. Infectious agents* associated with encephalitis may be viral, fungal, or bacterial. Encephalitis also may be post-infectious, with onset two to twelve days after a primary viral infection such as measles, varicella, rubella, or mumps. Arboviral encephalitis is a form of infectious encephalitis that is mosquito-borne. Signs and symptoms of these diseases are similar but vary in severity and rate of progress. Most infections are asymptomatic; mild cases often occur as febrile headache. Severe infections are usually marked by acute onset, headache, high fever, stupor, disorientation, coma, tremors, occasionally convulsions (especially in infants), and paralysis. The incubation period and mode of transmission varies depending on the infectious agent.

Laboratory Criteria for Surveillance Purposes

- Fourfold or greater change in serum antibody titer, ***or***
- Isolation of infectious agent from or demonstration of viral antigen or genomic sequences in tissue, blood, cerebrospinal fluid (CSF), or other body fluid, ***or***
- Specific immunoglobulin M (IgM) antibody by enzyme immunoassay (EIA) antibody captured in CSF or serum. Serum IgM antibodies alone should be confirmed by demonstration of immunoglobulin G antibodies by another serologic assay (e.g., neutralization or hemaglutination inhibition).

Surveillance Case Definitions

- *Confirmed:* a clinically compatible case that is laboratory confirmed.
- *Probable:* a clinically compatible case occurring during a period when arboviral transmission is likely, and with the following supportive serology: a stable (#twofold change) elevated antibody titer to an arbovirus (e.g., $320 by hemagglutination inhibition, $128 by complement fixation, $256 by immunofluorescence, and $160 by neutralization, or $400 by enzyme immunoassay IgM).

NOTE: *Some of these organisms are potential bioterrorist agents. Since this a group of illnesses, with mosquitoes or ticks being the vectors, some are considered "native" to an area, while others are not. Mosquito-borne encephalitides from a bioterrorist event would most likely be diseases considered imported but with no history of travel. If several people are infected, bioterrorism would be suspected, as there is no human to human spread and a competent mosquito host or tick is normally required for disease transmission. Cases suspected of being linked to bioterrorist activities should be immediately reported to 1-877-427-7317.

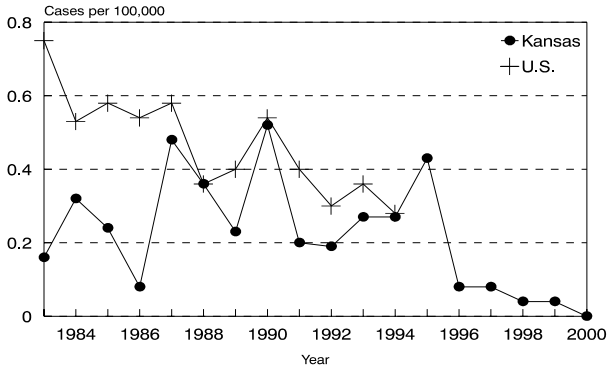
Epidemiology and Trends

2000 Case Total	0
U.S. rate (1999)	N/A

A total of 41 cases of infectious encephalitis were reported for the ten year period, 1991-2000. There have been 1-13 cases reported annually in Kansas. In 2000, no viral encephalitis cases were reported.

There were total of 125 Saint Louis encephalitis and 36 Western equine encephalitis cases reported in Kansas between 1964-1999. No arboviral encephalitis cases were reported in 2000.

Infectious Encephalitis incidence rate by year
Kansas, 1983-2000



"Arbovirus Surveillance in Kansas"

During the summer of 2001, the Kansas State University Entomology Department and Veterinary College will work with KDHE through Centers for Disease Control and Prevention (CDC) grant for arbovirus surveillance especially West Nile virus. This will include sampling and testing mosquitoes for St. Louis Encephalitis virus (SLE), Western Equine Encephalitis virus (WEE), and West Nile virus (WNV). The species of mosquito will also be determined and compared to mosquitoes found in Kansas during a similar survey in 1994. There will be samples from chicken flocks from across the state and dead bird surveillance. This will enhance the passive surveillance of human arbovirus encephalitis, including West Nile virus.

Enteropathogenic *Escherichia coli* (including hemolytic uremic syndrome)

Enteropathogenic *Escherichia coli* infection is a diarrheal illness caused by the bacterium, *Escherichia coli* O157:H7 and other enterohemorrhagic, enteropathogenic and enteroinvasive *E. coli*. Although most strains of *E. coli* are harmless and live in the intestines of healthy humans and animals, these strains produce powerful toxins and can cause severe illness. The condition is characterized by bloody or non-bloody diarrhea, accompanied by abdominal cramps. The infection can lead to the hemolytic uremic syndrome (HUS), a complication that may produce abnormal kidney function, and thrombotic thrombocytopenic purpura (TTP), a blood and kidney illness that can also affect the nervous system. Young children and the elderly are at increased risk for severe complications, occasionally resulting in death. Asymptomatic infections may also occur. The incubation period is from 3 to 4 days, but can extend to 10 days. Enterophathogenic *E. coli* infections have been linked to eating under-cooked ground beef and drinking unpasteurized contaminated juice, as well as through person-to-person transmission. Outbreaks have also been traced to contaminated produce and contaminated water. The organism can also spread easily from person to person, especially in day care centers and nursing homes.

Laboratory Criteria for Surveillance Purposes

- Isolation of *Escherichia coli spp.* from a clinical specimen. Special culture media must be used for confirmation. Some laboratories do not routinely test for pathogenic *E. coli* as part of the enteric bacteriology performed, unless specifically requested.

  Note: Positive Shiga toxin EIA (enzyme immunoassay) test directly on stool specimens instead of culture indicates only that Shiga toxin is present in the specimen. It does not give specific information such as which *E. coli* strain was responsible or whether it was a rare *Shigella dysentariae*. Any Shiga toxin positive stool should be sent to Kansas Health and Environment Laboratory for culture so that the organism can be identified and have it available for PFGE (Pulsed-field gel electrophoresis) testing.

Surveillance Case Definitions

C *Confirmed:* a case that is laboratory confirmed.

Comment

C Confirmation is based on laboratory findings, and clinical illness is not required.
C K.A.R. 28-1-18 requires that isolates be sent to Kansas Health and Environmental Laboratory.

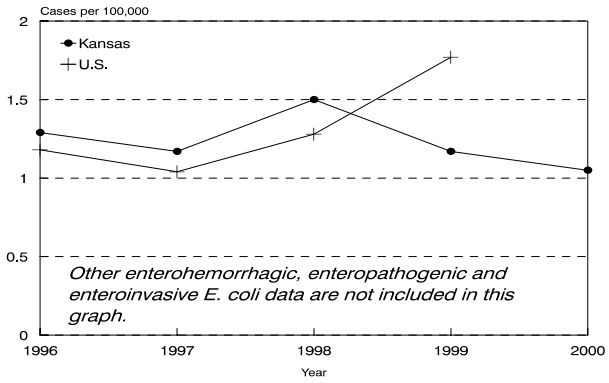
NOTE: **Starting in 2000, all enterohemorrhagic, enterophathogenic and enteroinvasive *E. coli* infections are reportable.**

Epidemiology and Trends

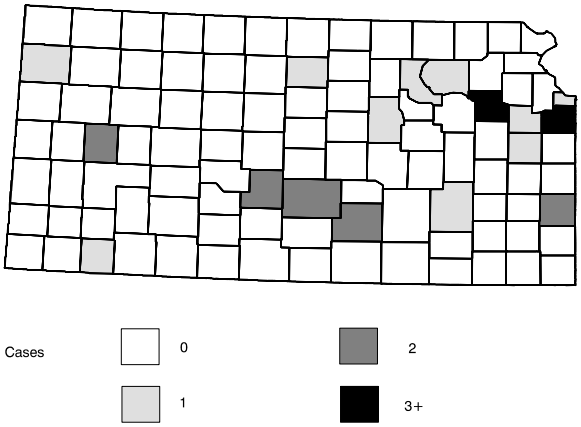
2000 Case Total	31
Kansas rate	1.2 per 100,000
U.S. rate (1999)	1.8 per 100,000
Cases by gender	
Female	16
Male	15
Cases by geographic area	
Urban	15
Rural	16

There were 31 cases of Enterophathogenic *E. coli* reported in Kansas in 2000. Twenty-eight cases of *E. coli* O157:H7, 2 cases of Enterotoxigenic *E. coli*, and one case of hemolytic uremic syndrome were reported. All reported cases were apparently sporadic cases; no outbreaks were detected in 2000. The cases ranged in age from less than 1 year to 83 years of age. The median age was 30 years. The highest incidence occurred in those less than 5 years of age.

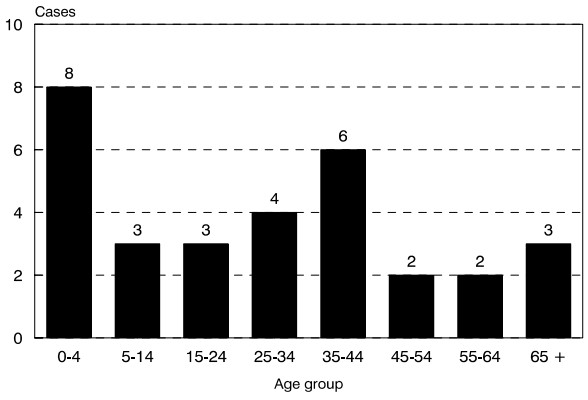
E. coli O157:H7 incidence rate by year
Kansas, 1996-2000



Enterophathogenic *E. coli* cases by county
Kansas, 2000



Enterophathogenic *E. coli* cases by age group
Kansas, 2000



GIARDIASIS

Giardiasis is an illness caused by *Giardia lamblia*, a one-celled, microscopic parasite that lives in the intestines of people and animals. The most common symptoms are diarrhea, abdominal cramps, and nausea, but asymptomatic infections may also occur. Symptoms may lead to weight loss and dehydration, appear 1-2 weeks after infection, and may last 4-6 weeks. It is most commonly transmitted through oral-fecal contact, by water contaminated with feces and occasionally from contact with infected pets (especially puppies and kittens).

Laboratory Criteria for Surveillance Purposes

- Demonstration of *Giardia lamblia* cysts in stool, ***or***
- Demonstration of *Giardia lamblia* trophozoites in stool, duodenal fluid, or small bowel biopsy

Surveillance Case Definitions

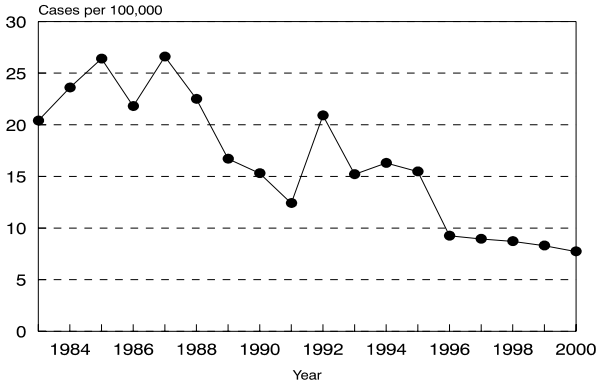
- *Confirmed:* a case that is laboratory confirmed.
- *Probable:* a clinically compatible case that is epidemiologically linked to a confirmed case.

Epidemiology and Trends

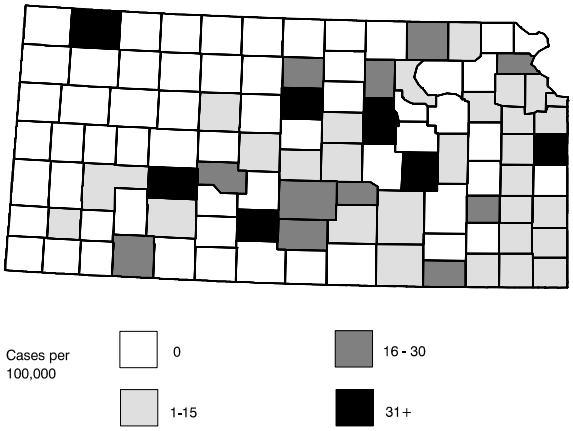
Case Total	205
Kansas rate	7.7 per 100,000
U.S. rate	N/A
Rate by gender	
Female	8.2 per 100,000
Male	7.0 per 100,000
Rate by race	
White	4.9 per 100,000
African-American	5.7 per 100,000
Asian/Pacific Islander	16.8 per 100,000
Rate by ethnicity	
Hispanic	4.7 per 100,000
Non-Hispanic	4.6 per 100,000
Rate by geographic area	
Urban	6.7 per 100,000
Rural	8.7 per 100,000

In Kansas, there were 205 giardia cases reported in 2000, a slight decrease compared to 220 cases in 1999. Reports of the disease in general decreased over the past 10 years. The three-year median for 1997-1999 was 226 cases. The cases ranged in age from less than 1 year to 87 years of age (median 28). This disease continues to affect primarily those less than 5 years of age with an incidence rate of 23 cases per 100,000 population. The majority of cases were Whites (58%), with an incidence rate of 4.9/100,000. Over half (57%) of the cases were reported from rural areas. However, among specific counties, Sedgwick county had the largest number of reported cases with a county-specific rate of 6.4/100,000, followed by Johnson county with a county-specific rate of 5.9/100,000.

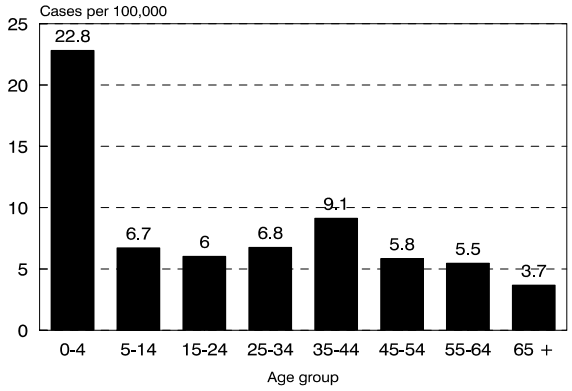
Giardiasis incidence rate by year
Kansas, 1983-2000



Giardiasis rate by county
Kansas, 2000



Giardiasis rate by age group
Kansas, 2000



GONORRHEA

Gonorrhea is a bacterial infection caused by *Neisseria gonorrhoeae*. Symptoms of gonorrhea usually appear within two to 10 days after sexual contact with an infected partner, although a small percentage of patients may be infected for several months without showing symptoms. In males it is usually characterized by a purulent urethral discharge and dysuria. In females, there is an initial urethritis or cervicitis often so mild it may pass unnoticed. Dependent upon sexual practices, pharyngeal and anorectal infections can occur. In males, the urethral infection is usually self-limiting; however, it may progress to epididymitis, and in rare cases, it can disseminate into an arthritis-dermatitis syndrome, endocarditis, and meningitis. Twenty percent of women infected with gonorrhea may develop uterine infection which may progress to endometritis, salpingitis pelvic inflammatory disease (PID), and the subsequent risk of infertility.

Laboratory Criteria for Surveillance Purposes

- Isolation of typical gram-negative, oxidate-positive diplococci (presumptive *Neisseria gonorrhoeae*) from a clinical specimen, ***or***
- Demonstration of *N. gonorrhoeae* in a clinical specimen by detection of antigen or nucleic acid, ***or***
- Observation of gram-negative intracellular diplococci in a urethral smear obtained from a male.

Surveillance Case Definitions

- *Confirmed:* a case that is laboratory confirmed.
- *Probable:* (a) demonstration of gram-negative intracellular diplococci in an endocervical smear obtained from a female ***or***
  (b) a written morbidity report of gonorrhea submitted by a physician.

Comments

- The gonorrhea screening program began in Kansas in 1973, providing testing in STD, prenatal, family planning, student health and prison facilities. The STD program contracts with Sedgwick and Wyandotte County Health Department Laboratories to perform tests for selected physicians in these communities. KDHE laboratories processes specimens from public clinics in other parts of the state.
- More detailed information on STDs in Kansas is available at: www.kdhe.state.ks.us/hiv-std.

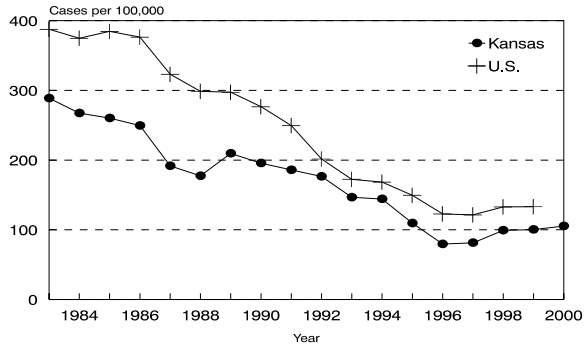
Epidemiology and Trends

Case Total	2,795
Kansas rate	105.3 per 100,000
U.S. rate (1999)	133.2 per 100,000
Rate by gender	
Female	110.9 per 100,000
Male	99.5 per 100,000
Rate by race/ethnicity	
White	28.1 per 100,000
African-American	1170.7 per 100,000
Asian/Pacific Islander	52.3 per 100,000
Native American	72.2 per 100,000
Hispanic	103.0 per 100,000
Rate by geographic area	
Urban	174.7 per 100,000
Rural	37.4 per 100,000

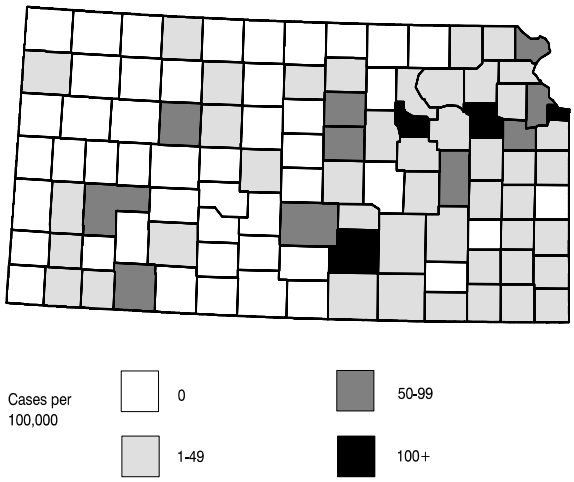
Gonorrhea is the second most commonly reported sexually transmitted disease in Kansas. In 2000, 2,795 cases of gonorrhea were reported in Kansas, an increase of 5% from 1999 (2,665). The three-year median for 1997-1999 was 2,574 cases. The cases ranged from 0 to 72 years of age. The median age was 22 years. Females accounted for 54% of the reported cases. As with chlamydia, gonorrhea infections disproportionately affect females in their childbearing years. Sixty-two percent of all reported cases in 2000 occurred in the 15-24 age group. This may represent the result of targeted screening efforts.

African-Americans accounted for 66% of all reported gonorrhea infections, followed by Whites (24%), Hispanics (5%), and Native Americans, Asian/Pacific Islanders each with less than 1% of the total cases. This may be due to differences in screening sites and in

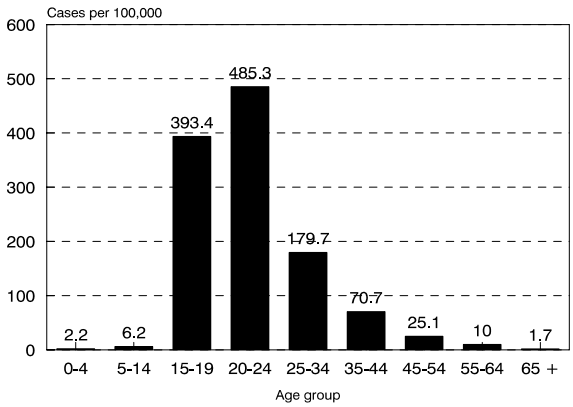
Gonorrhea incidence rate by year
Kansas, 1983-2000



Gonorrhea rate by county
Kansas, 2000



Gonorrhea rate by age group
Kansas, 2000



reporting bias, as described in the introduction. However, even when looking at results within each screening site, the positivity rate of gonorrhea was higher among African-Americans and Hispanics than among whites. Urban areas continued to report the majority of infections, with Wyandotte and Sedgwick Counties accounting for 62% of the total cases reported.

In 2000, a total of 41,972 tests were performed by Kansas Health and Environmental Laboratory, Sedgwick and Wyandotte County laboratories with an overall positivity rate of 1.8% (758/41,972). The remaining cases reported in 2000 originated from providers and other laboratories across Kansas.

HAEMOPHILUS INFLUENZAE, invasive disease*

Haemophilus influenzae is a Gram-negative cocobacillus that causes invasive diseases such as meningitis, septic arthritis, epiglottitis, cellulitis, bacteremia, and pneumonia. Invasive disease can be caused by serotypes (a) through (f). Most cases of invasive diseases in children before the introduction of *H. influenzae* type b (Hib) conjugate vaccination were caused by type b. The source of the organism is the upper respiratory tract of humans. Symptoms may include fever, lethargy, vomiting, and a stiff neck. Other symptoms depend on the part of the body affected. The incubation period is short, from 2 to 4 days. Antibiotic prophylaxis may be recommended when susceptible children are exposed to serotype b cases. The mode of transmission is presumably person to person, by direct contact, or through inhalation of droplets of respiratory tract secretions.

The first conjugate vaccine against Hib became available in 1987. There are currently several Hib conjugate vaccines licensed by the U.S. Food and Drug Administration. Recommendations are that all children be immunized with an approved Hib vaccine beginning at two months of age or as soon as possible thereafter. High levels of immunization among children have caused a dramatic decrease in the incidence of this decrease.

Laboratory Criteria for Surveillance Purposes

- Isolation of *H. influenzae* from a normally sterile site (e.g., blood, cerebrospinal fluid [CSF], joint, pleural, or pericardial fluid).

Surveillance Case Definitions

- *Confirmed:* a clinically compatible case that is laboratory confirmed.
- *Probable:* a clinically compatible case with detection of *H. influenzae* type b antigen in CSF.

Comment

- Immediate report of suspect cases of *H. influenzae* type b by telephone.
- All suspected cases of *H. influenzae* type b are reportable and reviewed by the KDHE Immunization Program staff for appropriate interventions to limit transmission.
- Positive antigen test results from urine or serum samples are unreliable for diagnosis of *H. influenzae* disease.

*Invasive means bacteria isolated from a normally sterile site, such as blood, bone, joint, pericardial fluid, peritoneal fluid, or spinal fluid.

Epidemiology and Trends

2000 Case Total	5
Kansas rate	0.2 per 100,000
U.S. rate (1999)	0.5 per 100,000

In 2000, five invasive *Haemophilus influenzae* infections were reported in Kansas. Four cases were reported as Hib infections. One case was reported as *H. influenzae* type f. Three of the cases were among people over age of 40. Only one case had documentation of two doses of Hib vaccination.

Conjugate vaccines became available in 1990 for use in infants as young as 6 weeks of age and there was an immediate and sustained decrease in the number of reported Hib cases among children in Kansas and in the U.S. Before introduction of the vaccine, an average of 31- 72 cases were seen annually in Kansas, now 0-8 cases are reported annually and most are in adults.

The national immunization goal for the year 2000 was to achieve a 90% coverage rate among two-year-old children for the complete series of vaccinations. Estimated Kansas immunization coverage rate of the National Immunization Survey for the third dose of the *Haemophilus influenzae* type b vaccine (Hib3) was 90.5% (± 4.5%) in 2000.

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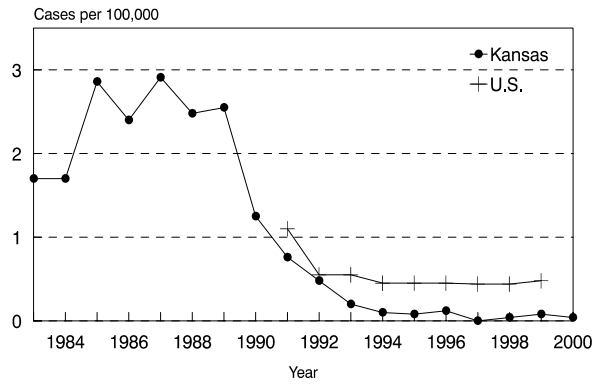
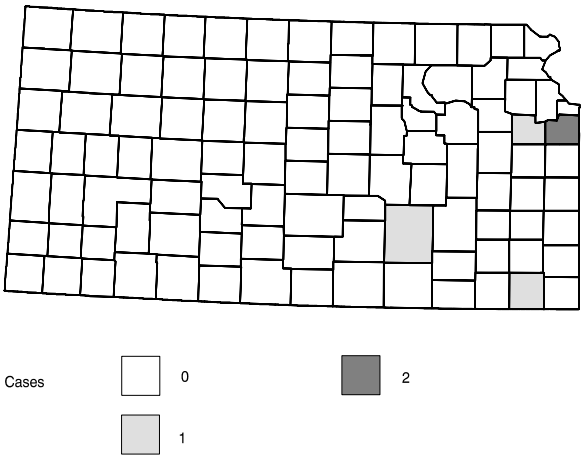
Haemophilus influenzae meningitis incidence rate by year - Kansas, 1983-2000



Haemophilus influenzae, invasive disease cases by county - Kansas, 2000



HANTAVIRUS PULMONARY SYNDROME

Hantavirus Pulmonary Syndrome (HPS) is seen in many parts of the U.S., and is commonly referred to as hantavirus. It is a febrile illness characterized by bilateral interstitial pulmonary infiltrates and respiratory compromise usually requiring supplemental oxygen and clinically resembling acute respiratory disease syndrome (ARDS). The typical prodrome consists of fever, chills, myalgia, headache, and gastrointestinal symptoms. Laboratory findings include hemoconcentration, left shift in the white blood cell count, neutrophilic leukocytosis, severe thrombocytopenia, and circulating immunoblasts. The symptoms may last a few hours to several days. The disease is caused by hantaviruses which are carried by specific rodents. In the U.S., the agent implicated is Sin Nombre virus carried by deer mice. Mice do not appear ill while carrying the virus. People may become infected by inhaling airborne particles of urine, feces, or saliva from infected rodents. The virus may also be spread by handling infected rodents, their nests, or droppings, and then touching the person's nose, mouth, or eyes. There is no evidence of person-to-person transmission. The incubation period is one to six weeks, usually 2-3 weeks.

Clinical Criteria

An illness characterized by one or more of the following clinical features:

- A febrile illness (i.e., temperature >101.0 °F [>38.3 °C]) characterized by bilateral diffuse interstitial edema that may radiographically resemble ARDS, with respiratory compromise requiring supplemental oxygen, developing within 72 hours of hospitalization, and occurring in a previously healthy person.
- An unexplained respiratory illness resulting in death, with an autopsy examination demonstrating noncardiogenic pulmonary edema without an identifiable cause.

Laboratory Criteria for Surveillance Purposes

- Detection of hantavirus-specific immunoglobulin M or rising titers of hantavirus-specific immunoglobulin G, or
- Detection of hantavirus-specific ribonucleic acid sequence by polymerase chain reaction in clinical specimens, or
- Detection of hantavirus antigen by immunohistochemistry.

Surveillance Case Definitions

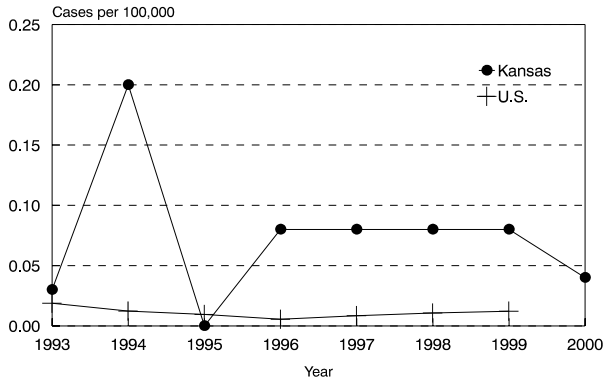
- *Confirmed:* a clinically compatible case that is laboratory confirmed.

Epidemiology and Trends

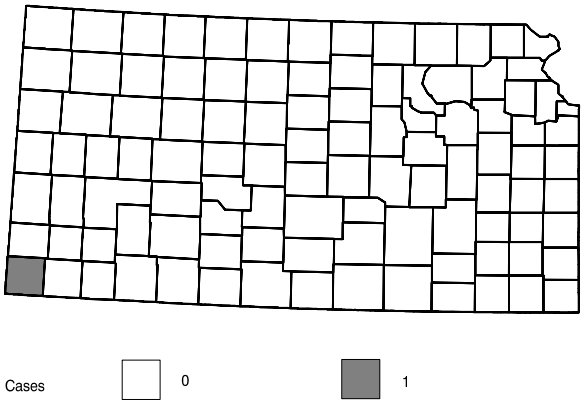
2000 Case Total	1
Kansas rate	<0.1 per 100,000
U.S. rate (1999)	<0.1 per 100,000

Since hantavirus was first recognized in the U.S. in 1993, there have been 0-4 cases reported annually in Kansas. In 2000, there was one fatal hantavirus case reported. Hantavirus antigen detection by immunohistochemistry for kidney, lung, and spleen was all positive. Performing outdoor farm work, living in an older home, and cleaning an old school were identified as potential exposures for this case. The three-year median for 1997-1999 was 2 cases.

Hantavirus incidence rate by year
Kansas, 1993-2000



Hantavirus cases by county
Kansas, 2000



HEPATITIS A

Hepatitis A is caused by an RNA picornavirus that affects the liver. Onset is usually abrupt with fever, malaise, anorexia, nausea, vomiting, and abdominal discomfort, followed within a few days by jaundice. Symptoms appear, on average, one month after exposure (range 15 to 50 days). Illness lasts 1-2 weeks to several months (rare) and the length of illness depends on the clinical severity. The disease is most common among children and young adults. Severity of illness is highly variable and can be milder or asymptomatic in young children. Transmission is from person to person by the fecal-oral route. Peak levels of the agent appear in the feces a week or two before symptom onset and diminish rapidly after symptoms appear. In recent years, community-wide cases have accounted for most disease transmission, although common-source outbreaks due to food contaminated by food handlers, contaminated produce, or contaminated water continue to occur. Immunity after infection probably lasts for life.

Gamma globulin (IG) can help prevent hepatitis A if administered soon after infection, and is recommended for people who live in the same house as a person with hepatitis A, for sexual contacts of a person with hepatitis A, and for children in the same day care center with a child with hepatitis A. IG is **NOT** given to casual contacts of a person with hepatitis A because the risk of infection in these situations is extremely small. An inactivated hepatitis A vaccine is very effective in preventing infection and is recommended for travelers to countries where hepatitis A is a common infection, and for high-risk adults and children in this country. The vaccine has been shown to be safe and efficacious. Protection against clinical hepatitis A may begin in some persons as soon as 14 days after a single dose of vaccine and nearly all have protective antibody by 30 days.

Clinical Criteria

An acute illness with (a) discrete onset of symptoms and (b) jaundice or elevated serum aminotranferase levels.

Laboratory Criteria for Surveillance Purposes

- Immunoglobulin M (IgM) antibody to hepatitis A virus (anti-HAV) positive.

Surveillance Case Definitions

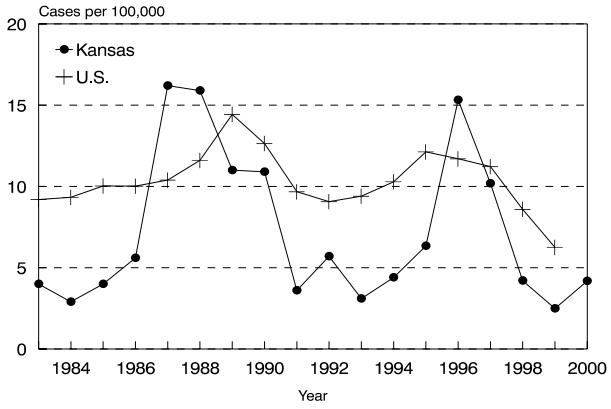
- *Confirmed:* (a) a case that meets the clinical case definition and is laboratory confirmed ***or***
  (b) a case that meets the clinical case definition and occurs in a person who has an epidemiologic link with a person who has laboratory-confirmed hepatitis A (e.g., household or sexual contact with an infected person during the 15-50 days before the onset of symptoms).

Epidemiology and Trends

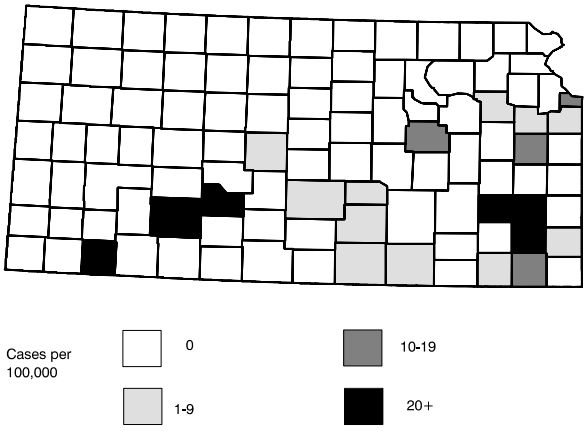
2000 Case Total	111
Kansas rate	4.2 per 100,000
U.S. rate (1999)	6.3 per 100,00
Rate by gender	
Female	3.0 per 100,000
Male	5.4 per 100,000
Rate by race	
White	3.9 per 100,000
African-American	2.5 per 100,000
Asian/Pacific Islander	2.1 per 100,000
Native American	4.3 per 100,000
Rate by ethnicity	
Hispanic	21.6 per 100,000
Non-Hispanic	2.6 per 100,000
Rate by geographic area	
Urban	4.2 per 100,000
Rural	4.2 per 100,000

In 2000, hepatitis A incidence in Kansas increased 68% from the previous year (66 cases); 14 cases were related to two separate localized outbreaks. The three-year median for 1997-1999 was 109 cases. The cases ranged in age from 1 year to 90 years of age; the median age was 30 years. The highest incidence occurred in the 15-24, 25-35, and 35-44 year age group, with rates of 5.5, 5.6, and 5.4 per 100,000, respectively. Eighty-five percent of the cases occurred in Whites, 29% in Hispanics, 4% in African-Americans, <1% in Asian/Pacific Islander and Native Americans, and in 10% of cases race was not reported. Risk factors identified during the 2-6 weeks prior to illness included contact with a hepatitis A case (30%), travel to foreign countries (18%), use of street drugs (14%), and eating raw shellfish (<1%). Individuals may have had more than one risk factor.

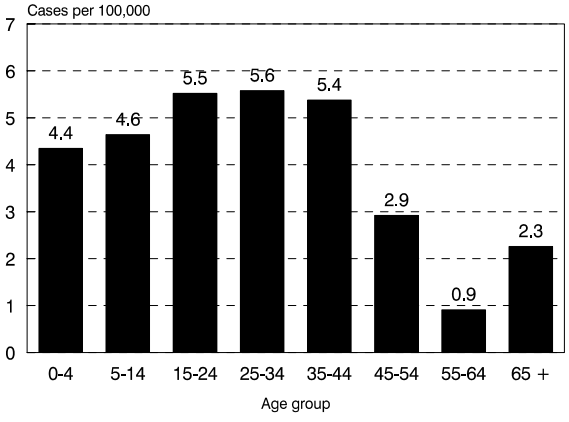
Hepatitis A incidence rate by year
Kansas, 1983-2000



Hepatitis A rate by county
Kansas, 2000



Hepatitis A rate by age group
Kansas, 2000



HEPATITIS B

Hepatitis B (HBV) is a virus that affects the liver. About half of the people who are infected will have symptoms, although in many cases symptoms may be mild and not be attributed to HBV infection. The usual signs and symptoms of acute HBV infection include fever, fatigue, dark urine, muscle or joint pain, loss of appetite, nausea, vomiting, and jaundice (yellow skin and sclera). Only a small portion of infections are clinically recognized; less than 10% of children and 30-50% of adults with acute infection will have jaundice as a symptom. After infection, about 90% of people recover, develop antibodies to the virus, and cannot spread the disease to others. Five to 10 percent cannot clear the virus from their systems and become chronic carriers. Chronic carriers will usually have ongoing inflammation of the liver, continue to be infectious to others, and have an increased risk of developing severe liver disease such as cirrhosis or liver cancer. Transmission occurs via percutaneous or permucosal exposure: i.e., (1) infective blood or body fluids introduced at birth, (2) through sexual contact, or (3) by contaminated needles. Blood (and serum-derived fluids), saliva, semen, and vaginal fluids have been shown to be infectious. The incubation period is usually 45-180 days, average 60-90 days. All persons who are hepatitis B surface antigen (HBsAg) positive are potentially infectious.

Hepatitis B can be prevented by vaccination. Hepatitis B vaccine is recommended for all children at birth, 1-2 and 6-18 months of age or, if not previously received, at 11-12 years of age. Hepatitis B vaccine is also recommended for persons in the following high risk groups: persons with occupational risk, clients and staff of institutions for the developmentally disabled; hemodialysis patients; recipients of certain blood products; household and sexual partners of HBsAg carriers; international travelers visiting high prevalence areas; injecting drug users; sexually active persons with multiple partners; and inmates of long-term facilities.

NOTE: All cases of viral hepatitis (acute and chronic) became reportable conditions in Kansas in 2000.

ACUTE HEPATITIS B

Clinical Criteria

An acute illness with (a) discrete onset of symptoms and (b) jaundice or elevated serum aminotranferase levels.

Laboratory Criteria for Surveillance Purposes

- Immunoglobulin (IgM) antibody to hepatitis B core antigen (anti-HBc) positive (if done) ***or*** hepatitis B surface antigen (HBsAg) positive.
- IgM anti-HAV negative (if done).

Surveillance Case Definitions

- *Confirmed:* a case that meets the clinical case definition and is laboratory confirmed.

Epidemiology and Trends

2000 Case Total	27
Kansas rate	1.0 per 100,000
U.S. rate (1999)	2.8 per 100,000

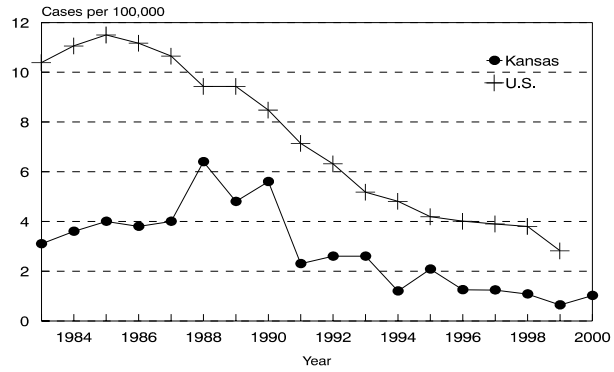
Cases by gender	
Female	9
Male	18

Cases by geographic area	
Urban	16
Rural	11

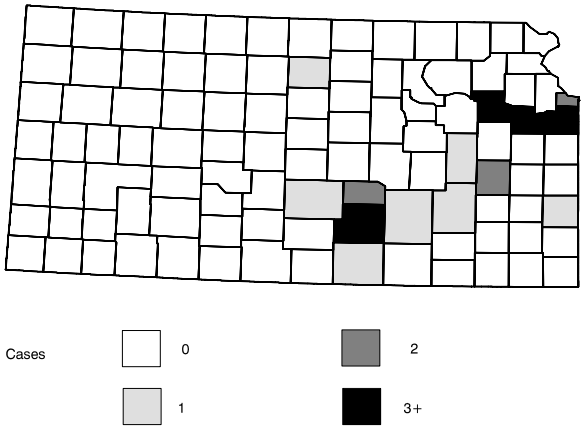
There were 27 confirmed acute hepatitis B cases reported in 2000, a 59% increase as compared to the 17 cases in 1999; the three-year median for 1997-1999 was 28 cases. The cases ranged in age from 20 to 87 years of age. The median age was 38 years. Eleven cases (67%) were males. The highest incidence occurred in the 15-24 and 35-44 year age group. Fifty-nine percent of the cases were reported from urban areas. Risk factors identified from 2 weeks to 6 months prior to illness included having more than one sexual partners (22%), injection drug use (15%), and needle stick injury (7%). Individuals may have had more than one risk factor.

The national immunization goal for the year 2000 was to achieve a 90% coverage rate among two-year-old children for the complete series of vaccinations. Estimated Kansas immunization coverage rate of the National Immunization Survey for the third dose of the hepatitis B vaccine was 89.8% (± 4.7%) in 2000.

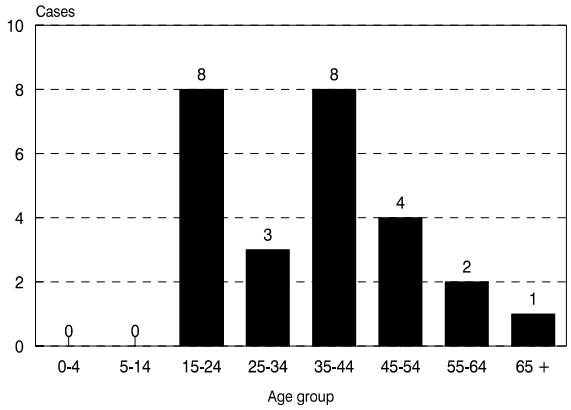
Acute hepatitis B incidence rate by year
Kansas, 1983-2000



Acute hepatitis B cases by county
Kansas, 2000



Acute hepatitis B cases by age group
Kansas, 2000



CHRONIC HEPATITIS B

Clinical Criteria

A chronic illness with or without a history of symptoms of hepatic inflammation. Only about one third of patients have elevated aminotranferase levels, which may fluctuate with intermittent exacerbations of hepatic inflammation. Diagnosis is made by two HBsAg positive tests at least 6 months apart.

Laboratory Criteria for Surveillance Purposes

- Hepatitis B surface antigen (HbsAg) positive.

Surveillance Case Definitions

- *Confirmed:* a case which is HBsAg positive, but which fails to meet the case definition for acute hepatitis B for any other reason*.

  ***Note:** This definition applies for surveillance and reporting purposes only. It is possible to have evidence of acute infection such as HBc IgM antibody without other required information for an acute (surveillance) case. Although the case would be reported as a chronic case, the individual medical management of the case and even the recommendations for protection of contacts may be different from those for chronic infection.

Comment

C All pregnant women should be screened for HBsAg at the earliest prenatal visit. Infants born to HBsAg (+) mothers should receive hepatitis B immune globulin (HBIG) within 12 hours of birth in addition to hepatitis B vaccine.

Epidemiology and Trends

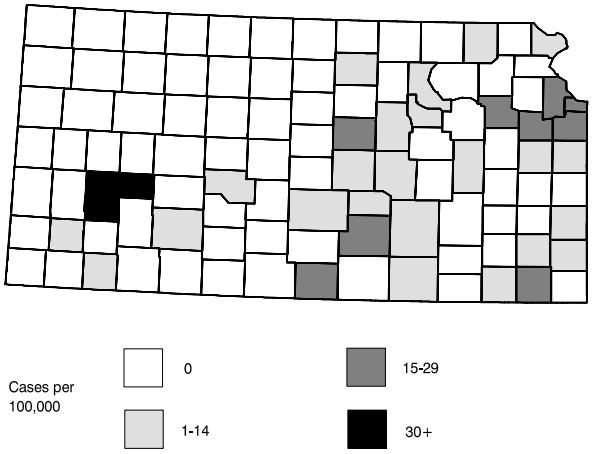
2000 Case Total	324
Kansas rate	12.2 per 100,000
U.S. rate (1999)	N/A
Rate by gender	
Female	11.8 per 100,000
Male	12.3 per 100,000
Rate by race	
White	3.5 per 100,000
African-American	10.8 per 100,000
Asian/Pacific Islander	232.4 per 100,000
Native American	4.3 per 100,000
Rate by ethnicity	
Hispanic	4.7 per 100,000
Non-Hispanic	7.6 per 100,000
Rate by geographic area	
Urban	16.8 per 100,000
Rural	7.8 per 100,000

There were 324 chronic Hepatitis B prevalent cases reported in 2000. The prevalent cases are chronic carriers who are HBsAg-positive. The cases ranged from less than 1 to 82 years of age (median = 36). Thirty-four percent of the cases occurred in Asian/Pacific Islanders, 26% in Whites, 5% in African-Americans, 2% in Hispanics, and in 34% of the cases race was not reported. There was a significantly higher proportion of Asian/Pacific Islanders in the population with chronic hepatitis B than in the Kansas population. The largest number of hepatitis B chronic cases occurred in the 25-34 (81 cases, 23.8/100,000) and 35-44 (96 cases, 22.5/100,000) year age groups. The ratio of urban (220) to rural (104) was about two to one. Risk factors identified included, injection drug use (2%), and <1% reported for having more than one sexual partners, employment in the medical field, blood transfusion, and needle stuck injury. Individuals may have had more than one risk factor.

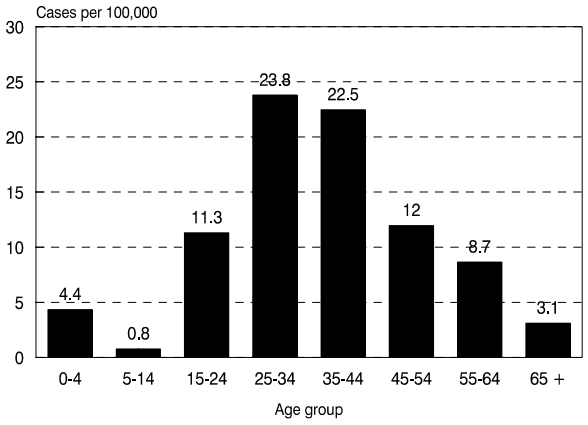
Chronic Hepatitis B became reportable in 2000 in Kansas .

No national data available.

Chronic hepatitis B rates by county
Kansas, 2000



Chronic hepatitis B rate by age group
Kansas, 2000



HEPATITIS C

Hepatitis C is a liver disease caused by a flavavirus. It is an illness with insidious onset of symptoms, including anorexia, abdominal discomfort, nausea, vomiting, and progressing to jaundice less frequently than hepatitis B (75% of infected individuals do not have jaundice). Chronic infection is common (>60% of cases) and can be symptomatic or asymptomatic. Prior to blood donor screening for this infection, hepatitis C occurred most often in people who had received blood transfusions. More recently, hemodyalisis patients and persons who have shared needles (e.g., injective drug users) have been most affected. The incubation period ranges from 2 weeks to 6 months, most commonly 6-9 weeks. It is spread primarily by exchange of contaminated blood with an infected person, such as through a blood transfusion or sharing needles. The risk of sexual transmission has not been thoroughly studied but appears to be less than 5%, similar to perinatal infection.

Up to 20% of acute hepatitis cases have no detectable antibody to hepatitis C virus (anti-HCV) when detected and reported and are classified as non-A, non-B hepatitis. Some (5%-10%) have not yet seroconverted to hepatitis C and others (5-10%) remain negative even after prolonged follow-up. Up to 90% acute hepatitis C cases become chronic carriers who are able to continue to transmit the disease.

NOTE: **All cases of viral hepatitis (acute and chronic) became reportable conditions in Kansas in 2000.**

ACUTE HEPATITIS C

Clinical Criteria

An acute illness with (a) discrete onset of symptoms and (b) jaundice or elevated serum aminotranferase levels

Laboratory Criteria for Surveillance Purposes

- Serum aminotranferase levels > 2.5 times the upper limit of normal, ***and***
- Immunoglobulin M (IgM) anti-HAV negative ***and***
- IgM anti-HBc negative, ***and***

For Hepatitis C:

- Antibody to hepatitis C virus (anti-HCV) positive, **verified by a supplemental test****: supplemental tests include RIBA (Recombinant ImmunoBlot Assay), or RT-PCR (Reverse Treanscriptase Polymerase Chain Reaction).

For Non-A, Non-B Hepatitis:

- Anti-HCV negative (if done).

Surveillance Case Definitions

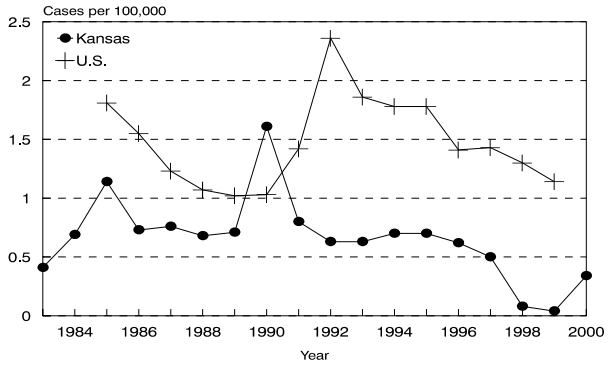
- *Confirmed:* a case that meets the clinical case definition and is laboratory confirmed.

Epidemiology and Trends

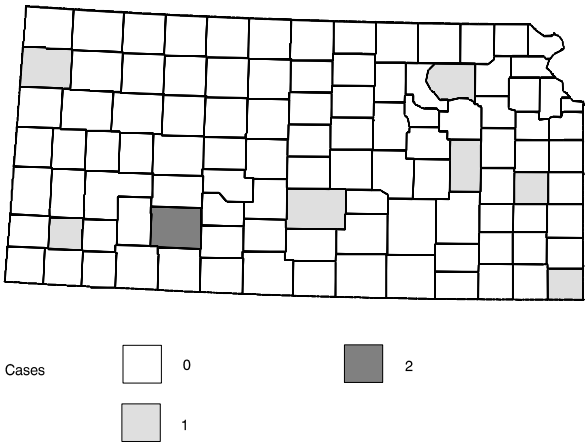
2000 Case Total	9
Kansas rate	0.3 per 100,000
U.S. rate (1999)	1.1 per 100,000
Cases by gender	
Female	3
Male	6
Cases by geographic area	
Urban	0
Rural	9

In Kansas, there was nine confirmed acute hepatitis C cases reported in 2000. The three-year median for 1997-1999 was 2 cases. The cases ranged from 30 to 81 years of age. The median age was 41 years. The majority of the cases were in Whites (89%). All were reported from rural areas. Risk factors identified from 2 weeks to 6 months prior to illness included having more than one sexual partners (11%), and injection drug use (11%). Individuals may have had more than one risk factor.

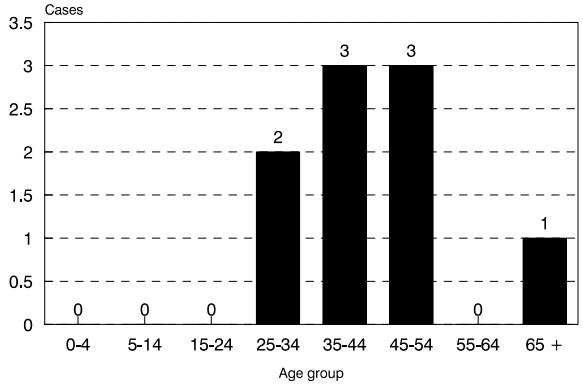
Acute hepatitis C incidence rate by year
Kansas, 1983-2000



Acute hepatitis C cases by county
Kansas, 2000



Acute hepatitis C cases by age group
Kansas, 2000



CHRONIC HEPATITIS C

Clinical Criteria

A chronic illness with or without a history of symptoms of hepatic inflammation. Although initial infection may be asymptomatic or wild (>90% of cases), chronic infection is common (>75% of cases). Of those chronically infected, about half will develop cirrhosis or hepatocellular carcinoma. Liver function tests may be elevated or normal during chronic disease.

Laboratory Criteria for Surveillance Purposes

- Serum for anti-HCV antibody, RIBA or PCR.

Surveillance Case Definitions

- *Confirmed:* a case which is anti-HCV positive (if done) and with a positive supplemental test (PCR or RIBA)**, **but** which fails to meet the case definition for acute HCV.

***NOTE*: The HCV screening antibody EIA (enzyme immunoassay) test alone is **NOT** sufficient to diagnose a person with Hepatitis C. In low prevalence populations, this test may be false positive half the time (hence the need for the confirmatory testing). About 15% of patients with confirmed positive for Hepatitis C antibodies spontaneously cleared their virus. This means that about 85% of patients infected with Hepatitis C virus may become chronic carriers.

Epidemiology and Trends

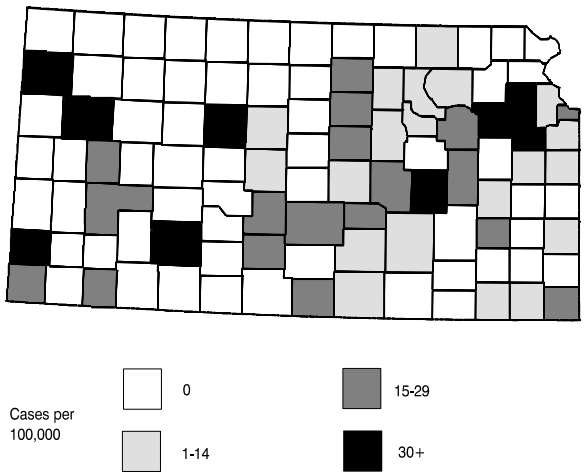
2000 Case Total	458
Kansas rate	17.3 per 100,000
U.S. rate (1999)	N/A
Rate by gender	
Female	14.3 per 100,000
Male	20.1 per 100,000
Rate by race	
White	9.9 per 100,000
African-American	15.9 per 100,000
Asian/Pacific Islander	8.4 per 100,000
Native American	29.7 per 100,000
Rate by ethnicity	
Hispanic	10.1 per 100,000
Non-Hispanic	10.1 per 100,000
Rate by geographic area	
Urban	22.4 per 100,000
Rural	12.2 per 100,000

In 2000, there were 458 chronic Hepatitis C prevalent cases reported. The cases ranged from less than 1 to 88 years of age (median = 43). The ratio of female (193) to male (161) was 1:1.4. Fifty-two percent of the cases occurred in Whites, 5% in African-Americans, 2% in Native American, <1% in Asian/Pacific Islanders and in 40% of the cases race was not reported. Of the 269 cases where ethnicity was noted, 6% were Hispanic. Since <1% of the Kansas population is identified as Native American, a high rate result from a few cases. The largest number of hepatitis C chronic cases occurred in the 35-44 (197 cases, 46.1/100,000) and 45-54 (137 cases, 40/100,000) year age groups. The ratio of urban (294) to rural (164) was about two to one. Most current risk factors identified included injection drug use (15%), needle stick injury (6%), and having more than one sexual partners (2%). Individuals may have had more than one risk factor.

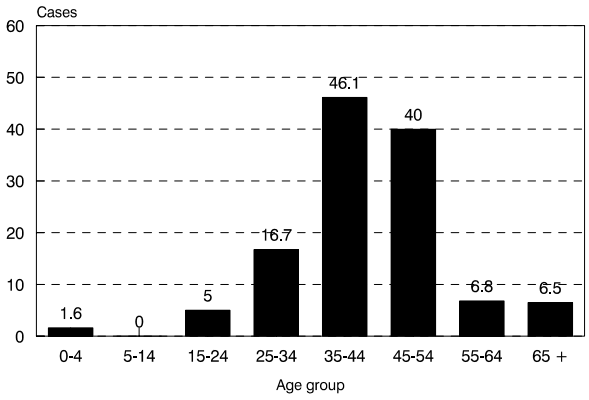
Chronic Hepatitis C became reportable in 2000 in Kansas.

No national data available.

Chronic hepatitis C rates by county
Kansas, 2000



Chronic hepatitis C rate by age group
Kansas, 2000



INFLUENZA

Influenza, more commonly called "flu," is a highly contagious viral infection of the nose, throat, bronchial tubes and lungs. There are two main types of virus - A and B. Each type includes many different strains which tend to change each year. Influenza occurs most often in the winter months. Illnesses resembling influenza may occur in the summer months but they are usually due to other viruses. Typical flu symptoms include headache, fever, chills, cough, and body aches. Intestinal symptoms are uncommon and are not included in the definition of a clinical case. Although most people are ill for only a few days, some people have a more serious illness, such as pneumonia, and may need to be hospitalized. Thousands of people die each year in the United States from the flu or related complications. Anyone can get influenza, but the disease is most serious in the elderly, or in people with chronic illnesses such as cancer, emphysema, diabetes, or weak immune systems. The incubation period is short, usually 1-3 days. Influenza is highly contagious and is easily transmitted through contact with droplets from the nose and throat of an infected person during coughing and sneezing.

Influenza vaccination is available to reduce the likelihood of infection or lessen the severity of the disease. Immunity to one strain of the influenza virus does not confer immunity to other strains. Consequently, the three strains included in the vaccine vary from year to year depending on strains expected to be in circulation for that season. Annual vaccination for influenza is also necessary because immunity declines rapidly over time. People should be vaccinated before influenza is seen in the community, which, in the United States, is from November through March. Thus, beginning each September, influenza vaccine should be offered to high-risk individuals when seen for routine care or when hospitalized. Organized vaccination campaigns are usually held from October through mid-November.

Laboratory Criteria for Surveillance Purposes

- Isolation of influenza virus from a throat specimen.

Surveillance Case Definitions

- *Confirmed:* a case that meets the clinical case definition and is laboratory confirmed.

Comment

- During the 2000-2001 influenza season, sentinel physician-based active influenza surveillance was conducted in cooperation with the CDC. The surveillance began on October 1, 2000 and ended on May 19, 2001. Twenty physicians, university student center, and hospitals volunteered to be sentinel physicians/sites. Each week sentinel sites were contacted by telephone to determine the number of patients seen with influenza-like-illness by four age groups and total patient visits for all reasons. Participants were asked to report these figures to CDC via telephone or internet. Influenza-like-illness-illness is defined as

fever ($100 °F[37.8 °C], oral or equivalent) AND cough or sore throat (in absence of a known cause). Physicians were also asked to collect pharyngeal swabs from patients presenting with influenza-like-illness and send them to the Kansas Health and Evironmental Laboratory (KHEL). The KHEL conducted viral isolation and identification by influenza type and subtype. Aggregate information from Kansas was sent weekly to the CDC.

- **Influenza strains contained in the 2001-2002 vaccine:** The trivalent influenza vaccine prepared for the 2001-2002 season will include A/Moscow/10/99 (H3N2)-like, A/new Caledonia/20/99 (H1N1)-like, and B/Sichuan/379/99-like strains. The 2000-2001 strains were A/Moscow/10/99 (H3N2)-like, A/new Caledonia/20/99 (H1N1)-like, and B/Beijing/184/93-like strains.

Epidemiology and Trends

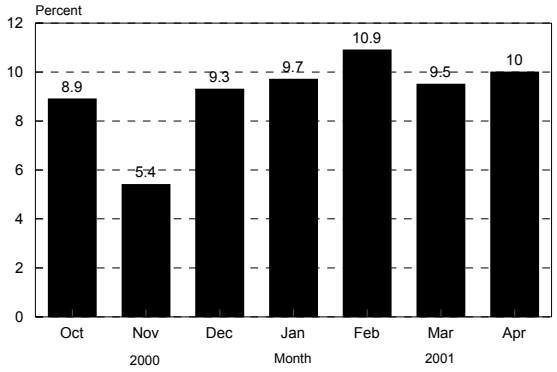
The 2000-2001 influenza season was mild, shorter, and somewhat delayed from the expected seasonal activity in Kansas. The trends observed in Kansas were reflected in much of the U.S., with increasing flu-like activity occurring in late December and peaking during mid January through early February, 2001.

Unlike the previous influenza season (1999-2000), where it was primarily influenza type A (H3N2), influenza A and influenza B occurred simultaneously during the 2000-2001 season. There were 135 specimens tested at the KHEL with 50 testing positive as of May 16, 2001. Of the 50 positive specimens, 24 (48%) were type A, with 23 subtyped as H1N1 and one subtyped as H3N2; 26 (52%) was type B, subtyped as BE93. The three identified strains were included in this year's vaccine.

There have been more influenza B cultured in Kansas than in the past few years among children. Age specific attack rates reflect persisting immunity from past experience with related subtype strains. Since antigenic subtypes of influenza B tend to be similar from year to year, children who have not been exposed to much influenza are more susceptible than adults to influenza B.

During this influenza season, February showed the highest percentage of deaths due to pneumonia/influenza. As seen in the previous seasons, ninety-one percent of deaths due to pneumonia/influenza (1,176/1,300) during this period were among people aged 65 and over

Percent of deaths due to pneumonia and influenza, October, 2000 - April, 2001, Kansas



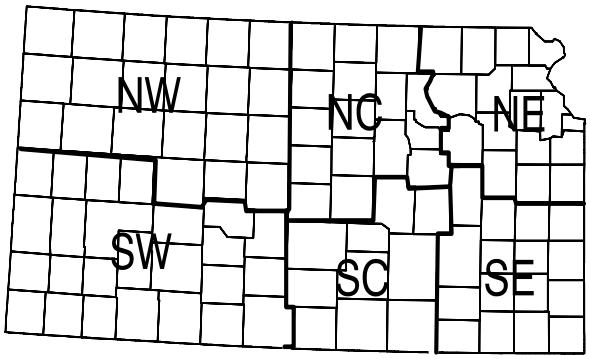
Total deaths (October,2000 - April, 2001) = 13,984

Test results* for influenza

Analyzed for influenza	135
Influenza A (+)	**24**
Typed (H1N1)	23
Typed (H3N2)	1
Influenza B (+)	**26**
Typed (all BE93)	26
Influenza (-)	**74**
Other viruses	**11**
Adenovirus	6
Enterovirus	2
Herpes simplex virus	2
Parainfluenza	1

*Only results from specimens submitted to the KHEL are presented.

Geographic regions in Kansas



Geographic Area (# spec.analyzed)	Pos A N (%)	Pos B N (%)
NE (75)	7 (9%)	14 (19%)
NC (16)	3 (19%)	4 (25%)
NW (0)	0 (0%)	0 (0%)
SE (5)	0 (0%)	0 (0%)
SC (37)	14 (38%)	8 (22%)
SW (2)	0 (0%)	0 (0%)
Total (135)	24 (18%)	26 (19%)

Age group	Specimens analyzed	Pos A N (%)	Pos B N (%)
< 12	53	11 (21%)	13 (25%)
12 - 19	28	3 (11%)	6 (21%)
20 - 39	34	7 (21%)	3 (9%)
> 39	20	3 (15%)	4 (20%)
Total	135	24 (18%)	26 (11%)

PEDIATRIC LEAD POISONING

Although not an infectious disease, lead poisoning is one of the most common and preventable pediatric health problems affecting Kansas children. In young children, lead levels above 10 ÷g/dL can affect the developing nervous system, resulting in delayed development, decreased IQ, and learning and behavior problems. Higher lead levels (greater than 20 ÷g/dL) can have adverse effects on the kidneys and blood-producing organs as well as the digestive and reproductive systems. Very high blood lead levels (greater than 70 ÷g/dL) can cause devastating health consequences, including seizures, coma, and death. The developing fetus is very susceptible to the lead exposure and blood lead levels of the mother. Children under six years most often become lead-poisoned by ingesting lead contaminated dust through the frequent hand-to-mouth activity typical of this age group such as thumb-sucking, or chewing on toys, pacifiers and other objects that have been in contact with dust and soil. Lead-based paint in homes built before 1978 is the most common source of lead exposure for children when painted surfaces are peeling, deteriorating, or disturbed during renovation or remodeling. Other potential sources of lead poisoning include water from leaded pipes, occupational or hobby exposure of the parent, soil contaminated from previous industry and leaded gas emissions, and food contaminated by imported dishes or cans containing lead. Children are considered to be at high risk for lead poisoning if they:

- Live in or regularly visit a house that was built before 1950.
- Live in or regularly visit a house built before 1978 with recent or ongoing renovations or remodeling (within the last six months).
- Have a sibling or playmate who has or did have lead poisoning.
- Live with an adult with occupational or recreational exposure to lead.

The common warning signs of lead poisoning such as headache, stomachache, fatigue, loss of appetite or sleep disturbance, can easily be mistaken for common childhood problems. Most children have no symptoms of lead poisoning until the blood lead levels are very high. A blood lead test is the only way to tell if a child has an elevated blood level and is recommended as part of standard pediatric check-ups. Blood lead testing is mandated as part of the Kan Be Healthy health assessment for children under six receiving Medicaid benefits.

Based on 1998 CDC guidelines, Kansas has a universal screening recommendation: Using a blood lead test, screen all children at 12 and 24 months of age, and screen all children from 36-72 months of age who have not been screened previously. High risk children should have a first blood lead test at six months of age.

Intervention activities should be triggered by blood lead levels $10 ÷g/dL. Children with blood lead levels $15 µg/dL should receive individual case management, including nutritional and educational interventions and more frequent screening. Medical evaluation and environmental investigation and remediation should be done for all children with blood levels $20 ÷g/dL.

Laboratory Criteria for Surveillance Purposes

- Venous blood lead level $10 :g/dL, ***or***
- Capillary blood lead results $10 :g/dL confirmed by retesting with venous blood, ***or***
- Two capillary blood lead results $10 :g/dL within 12 weeks of each other.

Surveillance Case Definitions

- *Confirmed:* a case that is laboratory confirmed.

Comment: More detailed information on lead in Kansas is available at: www.kdhe.state.ks.us/lead.

Epidemiology and Trends

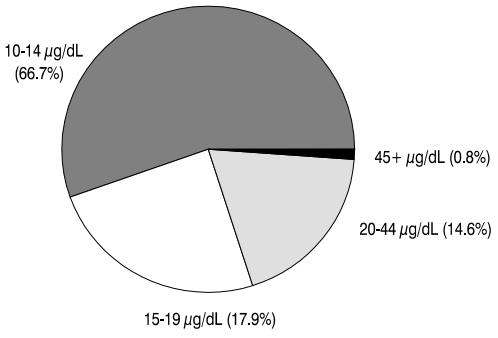
2000 Case Total	94
Kansas rate (age-specific)	36.5 per 100,000
U.S. rate	N/A
Rate by gender	
Female	37.4 per 100,000
Male	32.5 per 100,000
Rate by geographic area	
Urban	15.3 per 100,000
Rural	32.3 per 100,000

In 2000, the number of **confirmed** pediatric lead poisoning cases reported was 94 cases, lower than previous years. **Please make note of the case definition for a confirmed case on page 42.** In previous years, both venous and capillary blood lead results $10 :g/dL without being confirmed by retesting with venous blood were presented in the annual summary.

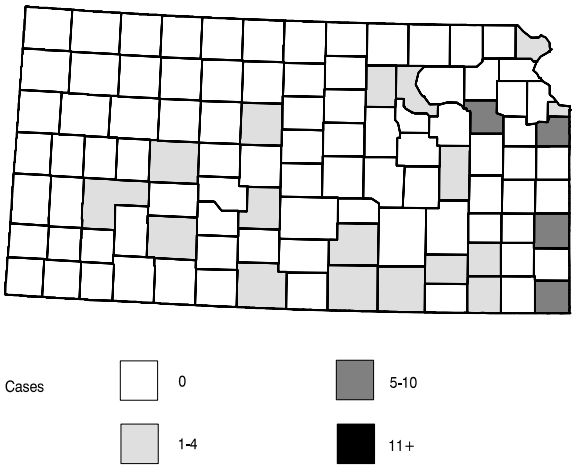
In 2000, the ratio of cases reported by KHEL (28 cases) to those reported by private labs (60 cases) was about 1:2. Results on both positive and negative specimens analyzed by KHEL are available, with a positive rate of 0.8%. Since only positive results are available from private laboratories, it is not possible to assess positivity rates in private facilities.

In 2000, 19 cases (20.2%) had a blood lead level $20 :g/dL, a level that might warrant an environmental risk assessment. The pediatric cases ranged in age from 8 to 69 months. The median age was 24 months. The 12-23 month age group accounted for 37% of the reported cases and represented the highest incidence and highest blood lead levels of pediatric poisoning. The ration of male to female was about one to one. Distribution of cases by race/ethnicity was not available. The ratio of urban to rural was about 1:2.

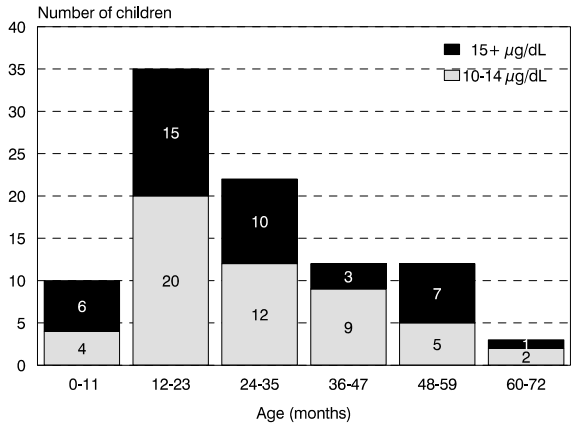
Positive Blood lead results for children 0 to 72 months
Kansas, 2000



Pediatric lead poisoning cases by county
Kansas, 2000



Pediatric lead poisoning cases by age group
Kansas, 2000



Differences in the number of cases by geographic area may be attributable to variations in screening practices.

LEGIONELLOSIS

Legionellosis is a bacterial disease caused by Gram-negative bacilli, *Legionellae*. Legionellosis is associated with two clinically and epidemiologically distinct illnesses: Legionnaries disease, which is characterized by fever, myalgia, cough, and pneumonia and Pontiac fever, a milder illness without pneumonia. It is called legionellosis because of an outbreak of this disease in Philadelphia in 1976, largely among people attending a state convention of the American Legion. Subsequently, the bacterium causing the illness was named *Legionella pneumophila*. The incubation period is 2-10 days, most often 5-6 days for Legionnaire's disease; 24-48 hours for Pontiac fever. *Legionella spp.* are widely distributed in the environment. They have been found in creeks and ponds, hot and cold water taps, hot water tanks, water in air conditioning cooling towers and evaporative condensers, and soil at excavation sites. The disease appears to be spread through the air from a soil or water source; other modes are possible, but none has been proven conclusively. All studies to date have shown that person-to-person spread does not occur and underlying illness often plays a role. Most cases have been sporadic occurrences, but outbreaks do occur. Legionellosis occurs most frequently with increasing ages, especially in patients who smoke and in those with diabetes mellitus, chronic lung disease, renal disease or malignancy; and in the immunocompromised, particularly those who are receiving corticosteroids or who have had an organ transplant.

Laboratory Criteria for Surveillance Purposes

- Isolation of Legionella from respiratory secretions, lung tissue, pleural fluid, or other normally sterile fluids, ***or***
- Demonstration of a fourfold or greater rise in the reciprocal immunofluorescence antibody (IFA) titer to $128 against *Legionella pneumophila* serogroup 1 between paired acute-and convalescent-phase serum specimens, ***or***
- Detection of *L. pneumophila* serogroup 1 in respiratory secretions, lung tissue, or pleural fluid by direct fluorescent antibody testing, ***or***
- Demonstration of *L. pneumophila* serogroup 1 antigens in urine by radioimmunoassay or enzyme-linked immunosorbent assay.

Surveillance Case Definitions

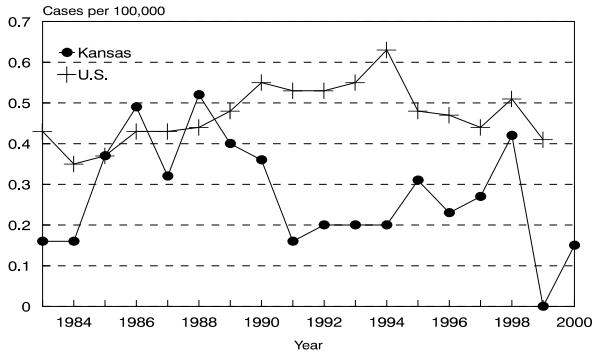
- *Confirmed:* a clinically compatible case that is laboratory confirmed.

Epidemiology and Trends

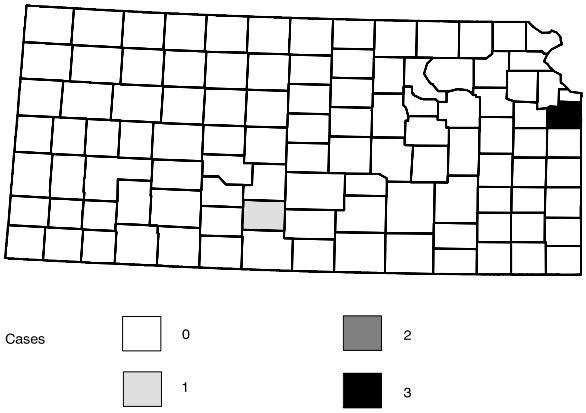
2000 Case Total	4
Kansas rate	0.2 per 100,000
U.S. rate (1999)	0.4 per 100,000

In 2000, there were four reported Legionellosis cases, an increase from the last year's case (0). The three year median for 1997-1999 was 7 cases. All cases reported were sporadic. Only one case was reported of being a smoker and no other major illnesses or underlying conditions were reported.

Legionellosis incidence rate by year
Kansas, 1983-2000



Legionellosis cases by county
Kansas, 2000



LYME DISEASE

Lyme disease is a bacterial infection caused by the spirochete, *Borrelia burgdorferi*. The first cluster of disease cases associated with this bacteria was discovered near Lyme, Connecticut. Lyme disease may cause symptoms affecting skin, nervous system, heart and/or joints of an individual, but it is almost never fatal. A systemic, tickborne disease, it is often multistage. The best clinical marker for the disease is the initial skin lesion (i.e., erythema migrans [EM]) that occurs in 60%-80% of patients 3 to 32 days after tick exposure. However, the early stages of the illness may be asymptomatic, and the patient may present with later manifestations. The infection is transmitted by very small ticks, the most important being the deer tick (*Ixodes scapularis*) and the western black-legged tick (*Ixodes pacificus*).

A vaccine for non-pregnant persons aged 15-70 years is available. The vaccine is recommended for persons exposed in high risk areas (counties where *Ixodes* populations are established, prevalence of infection is high and which are in the top 10% of counties reporting human cases; limited to the Northeast U.S. and parts of Minnesota and Wisconsin). Kansas is in a minimal to low risk area, so vaccine is not recommended.

Clinical Criteria

Erythema Migrans (EM)

EM is defined as a skin lesion that typically begins as a red macule or papule and expands over a period of days to weeks to form a large round lesion, often with partial central clearing. A single primary lesion must reach $5 cm in size. Secondary lesions also may occur. Annular erythematous lesions occurring within several hours of a tick bite represent hypersensitivity reactions and are not EM. For most patients, the expanding EM lesion is accompanied by other acute symptoms, particularly fatigue, fever, headache, mildly stiff neck, arthralgia, or myalgia. These symptoms are typically intermittent. The diagnosis of EM must be made by a physician. Laboratory confirmation is recommended for persons with no known exposure.

Late manifestations

1. *Musculosketal system*
   Recurrent, brief attacks (weeks or months) of objective joint swelling in one or a few joints. Manifestations not considered as criteria for diagnosis include chronic progressive arthritis not preceded by brief attacks and chronic symmetrical polyarthritis. Additionally, arthralgia, myalgia, or fibromyalgia syndromes alone are not criteria for musculoskeletal involvement.

2. *Nervous system*
   Any of the following, alone or in combination: lymphocytic meningitis; cranial neuritis, particularly facial palsy (may be bilateral); radiculoneuropathy; or, rarely, encephalomyelitis. Encephalomyelitis must be confirmed by demonstration of antibody production against *B. burgdorferi* in the CSF, evidenced by a higher titer of antibody in CSF than in serum. Headache, fatigue, paresthesia, or mildly stiff neck alone are not criteria for neurologic involvement.

3. *Cardiovascular system*
   Acute onset of high-grade (2/ or 3/) atrioventricular conduction defects that resolve in days to weeks and are sometimes associated with myocarditis. Palpitations, bardycardia, bundle branch block, or myocarditis alone are not criteria for cardiovascular involvement.

Laboratory Criteria for Surveillance Purposes

- Isolation of *Borrelia burgdorferi* from a clinical specimen ***or***
- Demonstration diagnostic immunoglobulin M or immunoglobulin G antibodies to *B burgdorferi* in serum or cerebrospinal fluid (CSF). A two-test approach using a sensitive enzyme immunoassay or immunofluorescence antibody followed by Western blot is recommended.

Surveillance Case Definitions

- *Confirmed:* (a) a case with EM ***or***
  (b) a case with at least one late manifestation that is laboratory confirmed.

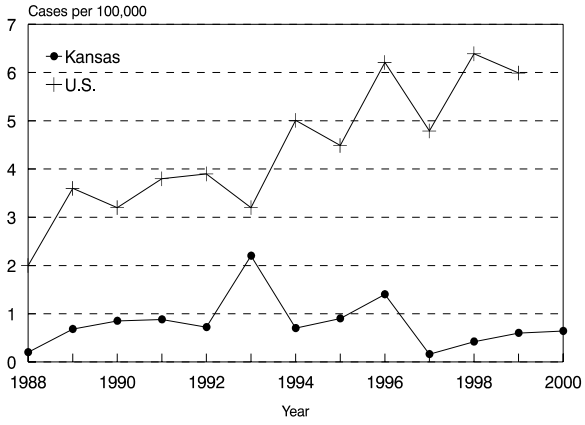
NOTE: The spirochete (*Borrelia burgdorferi*) that causes Lyme disease has not been reported as isolated by culture in Kansas.

Epidemiology and Trends

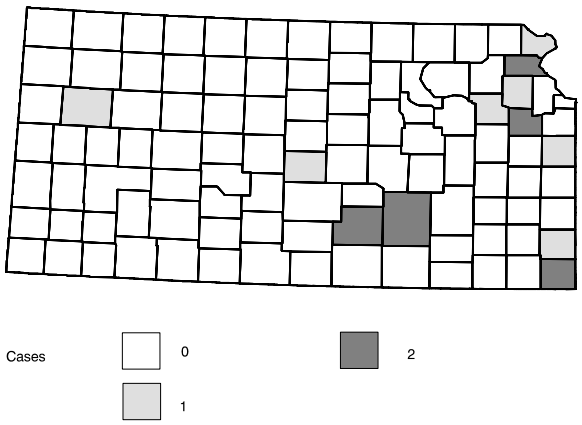
2000 Case Total	17
Kansas rate	0.6 per 100,000
U.S. rate (1999)	0.4 per 100,000
Connecticut rate (2000) (highest state rate in U.S.)	110.1 per 100,000
Case by gender	
Female	11
Male	6
Cases by geographic area	
Urban	5
Rural	12

In 2000, there were 17 cases of Lyme disease reported. The cases ranged in age from 3-77 years of age (median=45). Eleven of the cases were female. Twelve cases were reported from rural areas. Twelve cases (71%) had EM, 8 cases (47%) had rheumatic signs, and no case reported having cardiac signs or neurologic signs.

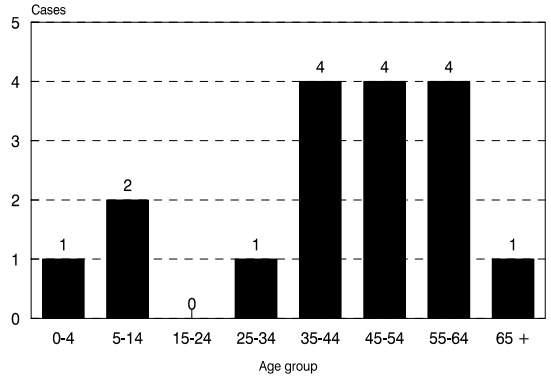
Lyme disease incidence rate by year
Kansas, 1988-2000



Lyme disease cases by county
Kansas, 2000



Lyme disease cases by age group
Kansas, 2000



MALARIA

Malaria is a parasitic infection caused by *Plasmodium vivax*, *P. ovale*, *P. malariae*, or *P. falciparum*. Signs and symptoms are variable; however, most patients experience fever. In addition to fever, commonly associated symptoms include headache, back pain, chills, sweats, myalgia, nausea, vomiting, diarrhea, and cough. Untreated *P. falciparum* infection can lead to coma, renal failure, pulmonary edema, and death. The diagnosis of malaria should be considered for any person who has these symptoms and who has traveled to an area in which malaria is endemic. Asymptomatic parasitemia can occur among persons who have been long-term residents of areas in which malaria is endemic. The time between the infective bite and the appearance of clinical symptoms is 7-14 days for *P. falciparum*, 8-14 days for *P. vivax* and *P. ovale*, and 7-30 days for *P. malarieae*. With some strains of *P. vivax* and *P. ovale* from temperate areas, there may be a protracted incubation period of 8-10 months or longer. Malaria is spread through the bite of an infective female *Anopheles spp.* mosquito. Most species feed at dusk an during early night hours; some important vectors have biting peaks around midnight or the early hours of the morning.

Laboratory Criteria for Surveillance Purposes

- Demonstration of malaria parasites in blood films.

Surveillance Case Definitions

- *Confirmed:* an episode of microscopically confirmed malaria parasitemia in any person (symptomatic or asymptomatic) diagnosed in the United States, regardless of whether the person experienced previous episodes of malaria while outside the country. Therefore cases can be counted more than once in a lifetime.

Comment

- A subsequent attack experienced by the same person but caused by a different *Plasmodium spp.* is counted as an additional case. A subsequent attack experienced by the same person and caused by the same species in the United States may indicate a relapsing infection or treatment failure caused by drug resistance.

Epidemiology and Trends

2000 Case Total	6
Kansas rate	0.2 per 100,000
U.S. rate (1999)	0.6 per 100,000

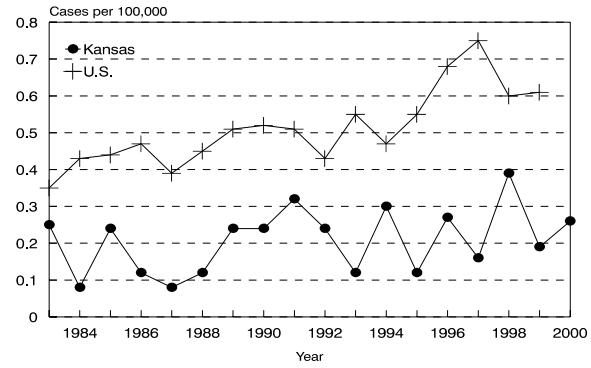
Cases by gender	
Female	1
Male	5

Cases by geographic area	
Urban	3
Rural	3

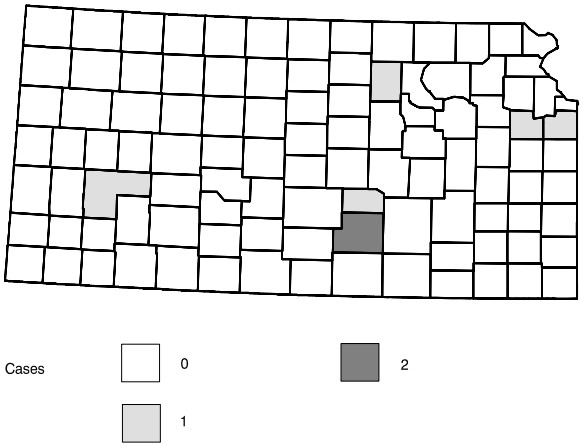
In 2000, there were 6 cases of malaria reported. The cases ranged in age from 14 to 52 years with a median age of 30. Four reported cases (U.S. citizens) had traveled to and two were from a foreign country where malaria is present. Cases had been in the following geographic areas: Australia (1), China (1), El Salvador (1), Honduras (1), India (1), Kenya (1), Microneisa (1), Nigeria (2), and Vietnam (1); individuals may have traveled to more than one country.

The following species of malaria were identified in cases: *P. falciparum* (3), *P. vivax* (2), and undetermined (1). One case had taken malaria prophylaxis with Lariam (mefloquine).

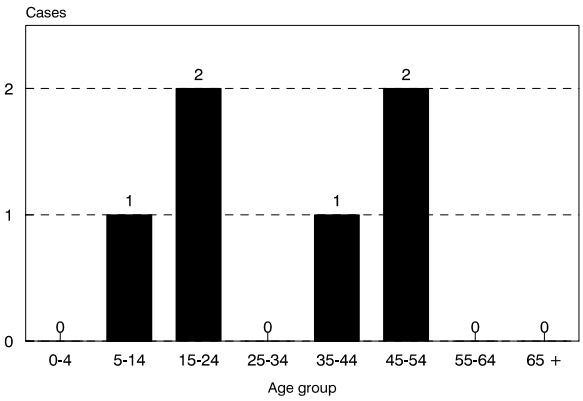
Malaria incidence rate by year
Kansas, 1983-2000



Malaria cases by county
Kansas, 2000



Malaria cases by age group
Kansas, 2000



MEASLES (Rubeola)

Measles is an extremely contagious viral disease caused by measles virus, a member of the family *Paramyxoviridae,* that can be prevented by vaccination. Measles causes a rash, sometimes with mild itching, and is always accompanied by fever and a hacking cough and sometimes by eye sensitivity to light. The fever usually subsides in 3 to 5 days, and patients are contagious 1-2 days before the onset of symptoms to 4 days after the rash appears. The vast majority of children recover completely from measles, but serious complications can occur. These include pneumonia, ear infection, and encephalitis (inflammation of the brain). Measles encephalitis may cause permanent brain damage and can occasionally result in death. The incubation period is about 10 days, varying from 7 to 18 days from exposure to onset of fever, usually 14 days until rash appears. It is spread through the air by droplets from the nose, throat, and mouth of an infected person.

The vaccine is available as a single antigen preparation, combined with rubella vaccine, or combined with mumps and rubella vaccines. The current recommendation in the USA is a routine 2-dose measles vaccine schedule, with the initial dose administered at 12-15 months of age. The second dose should be given at school entry (4-6 years of age). Both doses should generally be given as combined measles-mumps-rubella vaccine (MMR).

Laboratory Criteria for Confirmation

- Positive serologic test for measles immunoglobulin M antibody, ***or***
- Significant rise in measles antibody level by any serologic assay, ***or***
- Isolation of measles virus from a clinical specimen

Surveillance Case Definitions

An illness characterized by all the following:

(a) a generalized rash lasting $3 days
(b) a temperature $101.0 °F ($38.3 °C)
(c) cough, coryza, or conjunctivitis

- *Confirmed*: a case that is laboratory confirmed or that meets the clinical case definition and is epidemiologically linked to a confirmed case. A laboratory -confirmed case does not need to meet the clinical case definition.
- *Probable*: a case that meets the clinical case definition, has noncontributory or no serologic or virologic testing, and is not epidemiologically linked to a confirmed case.
- *Suspected*: any febrile illness accompanied by rash.

Comment

- **Report suspect cases by telephone immediately.**

- All suspected, probable, and confirmed cases of measles are reportable and reviewed by the KDHE Immunization Program staff for appropriate control measures.
- An *indigenous* case is defined as a case of measles that is not imported. Cases that are linked to imported should be classified as indigenous if the exposure to the imported case occurred in the reporting state. Any case that cannot be proved to be imported should be classified as indigenous.

Epidemiology and Trends

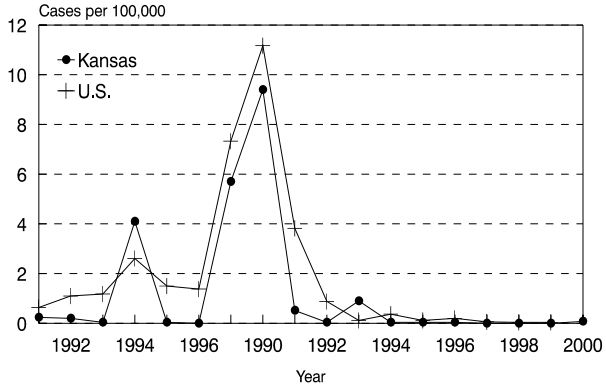
2000 Case Total	2
Kansas rate	0.1 per 100,000
U.S. rate (1999)	<0.1 per 100,000

After four-years with no reported cases, two confirmed cases of measles in adults were reported within a 6 week period in late 2000. Neither case had received measles vaccination as a child. Since 1992, there have been 0-2 cases reported annually in the state.

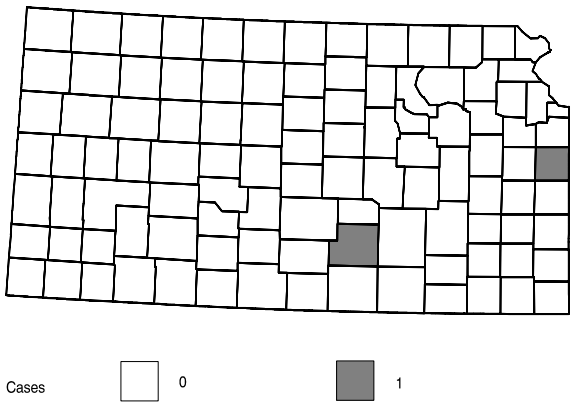
One case was a person who had not traveled outside of the U.S. within eighteen days (maximum incubation period) of onset. However, the case had moved to Kansas from New York City. The New York City and State Health Departments were unable to identify an index case in that state. The second case had a history of recent travel to Japan within the incubation period, where measles cases are more common. No secondary cases have been identified.

The national immunization goal for the year 2000 was to achieve a 90% coverage rate among two-year-old children for the complete series of vaccinations. Estimated Kansas immunization coverage rate of the National Immunization Survey for the first dose of the measles, mumps, and rubella vaccine (MMR1) was 86.0% (±5.1%) in 2000.

Measles incidence rate by year
Kansas, 1983-2000



Measles cases by county
Kansas, 2000



MENINGITIS, BACTERIAL
(non-meningococcal, non-*Haemophilus influenzae* type B)

Bacterial meningitis is a generic term defined as inflammation of the membranes of the spinal cord or brain caused by bacteria that reach the meninges via blood or lymph through trauma, or from adjacent body structures (e.g. sinuses, mastoid cells). For the purpose of this document bacterial meningitis is defined as a group of diseases characterized by infection of the meninges caused by a bacteria other than *Neisseria meningitidis* or *Haemophilus influenzae* type b, and excludes aseptic meningitis.* Symptoms can include fever, headache, stiff neck, vomiting, and red rash. The incubation period ranges from 2 to 10 days. Mode of transmission is by direct person-to-person contact, including respiratory droplets from nose and throat of infected people. Post-exposure prophylaxis of contacts is generally not recommended.

Laboratory Criteria for Surveillance Purposes

- Isolation and identification of a bacterial pathogen from the CSF or blood.

Surveillance Case Definitions

C *Confirmed:* a clinically compatible case that is laboratory confirmed or has a positive blood culture.

Comment

C **Report suspect cases by telephone immediately.**
C Kansas laws require that isolates be sent to the Kansas Health and Environmental Laboratory for serotyping.

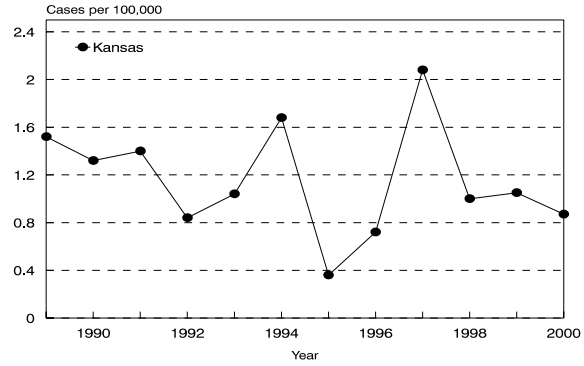
* Viral (aseptic) meningitis is not reportable in Kansas.

Epidemiology and Trends

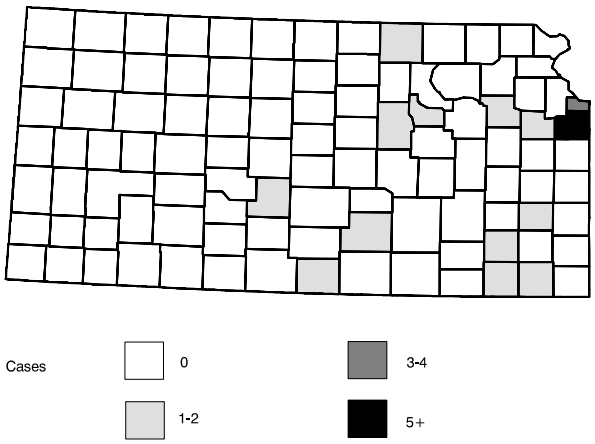
2000 Case Total	22
Kansas rate	0.9 per 100,000
U.S. rate	N/A
Cases by gender	
Female	11
Male	11
Cases by geographic area	
Urban	13
Rural	9

In 2000, there were 22 bacterial meningitis cases reported. All cases appeared to be sporadic. The three-year median for 1997-1999 was 28 cases. The cases ranged in age from less than 1 year to 91 years; median was 51 years. The ratio of female to male was one to one. Twenty (91%) isolates were speciated. The following species of bacteria were identified in cases: *Streptococcus pneumoniae* (14), Group A streptococcus (2), Group B streptococcus (2), and *E. coli* (2).

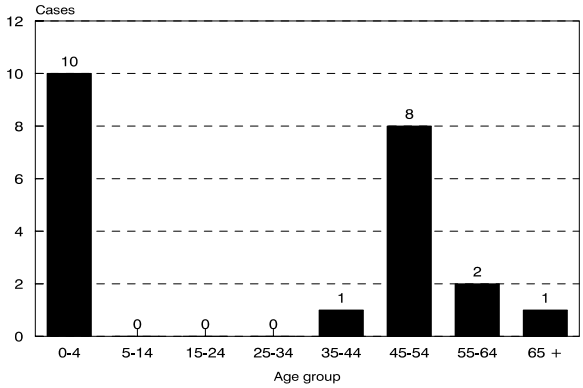
Bacterial Meningitis incidence rate by year
Kansas, 1989-2000



Bacterial Meningitis cases by county
Kansas, 2000



Bacterial Meningitis cases by age group
Kansas, 2000



MENINGOCOCCAL DISEASE

Meningococcal disease is an acute bacterial disease caused by *Neisseria meningitidis*, a Gram-negative diplococcus. The most common serogroups of *N. meningitidis* in the U.S. are B, C, W-135, and Y. Late winter to early spring is the peak season for infection, but this can occur at any time of the year. Even with early diagnosis and appropriate treatment, the fatality rate of meningococcal meningitis is 5-15%. The disease manifests most commonly as meningitis and/or meningococcemia that may progress rapidly to purpura fulminans, shock, and death. The disease is characterized by sudden onset with fever, intense headache, nausea and often vomiting, and stiff neck. Up to 5%-10% of populations may carry *N. meningitidis* in the nasopharynx without developing invasive disease, while a few develop bacteremia, sepsis, meningitis, or pneumonia. The incubation period ranges from two to 10 days, usually three to four days. Transmission of *N. meningitidis* is from person to person by direct contact with respiratory droplets from the nose and throat of infected people. A vaccine is available for use in outbreaks if A, C, Y or W-135 serogroups are implicated. There is no vaccine for serogroup B, responsible for 20-30% of reported cases in Kansas. Chemoprophylaxis is used for close contacts of cases (e.g., household members, intimate contacts, health care personnel performing mouth-to-mouth resuscitation, day care center play-mates). No chemoprophylaxis is recommended for less intimate contacts (e.g., school mates, health care workers with minimal contact, and etc.) except during an outbreak or in a child care center.

Laboratory Criteria for Surveillance Purposes

- Isolation of *Neisseria meningitidis* from a normally sterile site (e.g., blood or cerebrospinal fluid [CSF] or, joint, pleural, or pericardial fluid). (Note: a positive antigen test is not sufficient to confirm a case for surveillance purposes.)

Surveillance Case Definitions

- *Confirmed*: a clinically compatible case that is laboratory confirmed.
- *Probable*: a case with a positive antigen test in CSF or clinical purpura fulminans in the absence of a positive blood culture.

Comment

- **Report suspect cases by telephone immediately.**
- Kansas laws require that isolates be sent to the Kansas Health and Environmental Laboratory for serotyping.
- Positive antigen test results from urine or serum samples are unreliable for diagnosing meningococcal disease.

Note: Advisory Committee on Immunization Practices has modified its guidelines for use of the meningococcal vaccine, particularly for college freshman who live in dormitories. This group has been found to be at increased risk relative to other persons their age. The recommendation is that those who provide medical care for this group give information to students and their parents about meningococcal disease and the benefits of vaccine. Vaccine should be made easily available to those who wish to reduce their risk of meningococcal disease.

Epidemiology and Trends

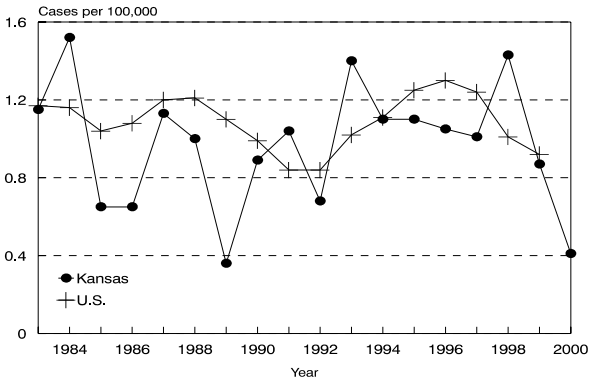
2000 Case Total	11
Kansas rate	0.4 per 100,000
U.S. rate (1999)	0.9 per 100,000

Cases by gender	
Female	7
Male	4

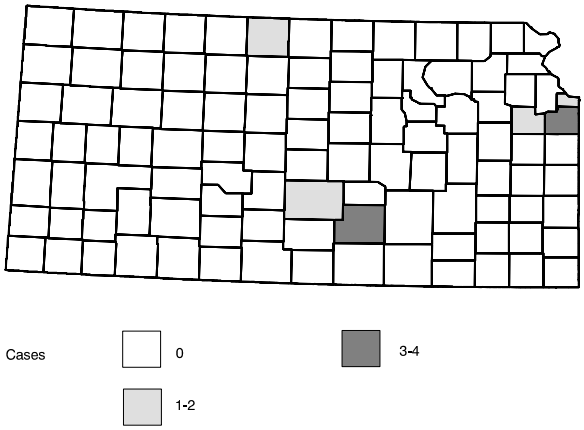
Cases by geographic area	
Urban	9
Rural	2

Eleven meningococcal meningitis were reported during 2000, a decrease from 23 cases reported in 1999. These were sporadic cases; no outbreaks were detected. The three-year median for 1997-1999 was 26 cases. The cases ranged in age from less than 1 to 92 years of age. The median age was 42 years. Nine (82%) of the cases were reported from urban areas and 7 cases (64%) were female. There were no reported cases among college students. Serogroups among the 6 isolates available were Y (3), C (2), and B (1).

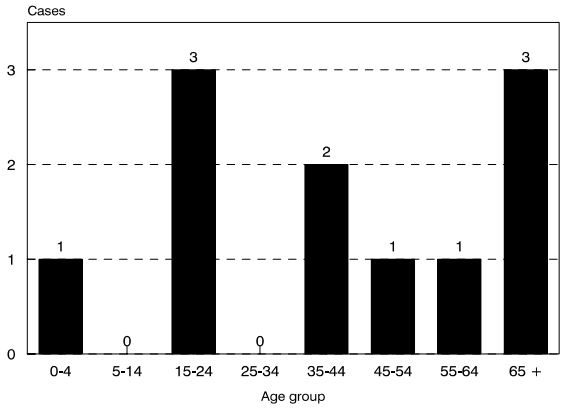
Meningococcal disease incidence rate by year
Kansas, 1983-2000



Meningococcal cases by county
Kansas, 2000



Meningococcal disease cases by age group
Kansas, 2000



MUMPS

Mumps is an acute viral disease caused by a paramyxovirus. It is characterized by fever, swelling and tenderness of one or more salivary glands, usually the parotid and sometimes the sublingual or submaxillary glands. Orchitis may occur in males and oophoritis in females. Winter and spring are the usual times of increased occurrence. The incubation period is 12 to 25 days, commonly 18 days. Mumps is transmitted by droplet spread and by direct contact with the saliva of an infected person.

Vaccine is available either as a single vaccine or in combination with rubella and measles live-virus vaccines (MMR). The vaccine has been available since 1971. The current recommendation is a routine two-dose MMR vaccine schedule, with the initial dose administered at 12-15 months of age. The second dose should be given at school entry (4-6 years of age).

Clinical Criteria

An illness with acute onset of unilateral or bilateral tender, self-limited swelling of the parotid or other salivary gland, lasting $2 days, and without other apparent cause.

Laboratory Criteria for Surveillance Purposes

- Isolation of mumps virus from clinical specimen, ***or***
- Significant rise between acute- and convalescent-phase titers in serum mumps immunoglobulin G antibody level by any standard serologic assay, ***or***
- Positive serologic test for mumps immunoglobulin M (IgM) antibody.

Surveillance Case Definitions

- *Confirmed:* a case that is laboratory confirmed or that meets the clinical case definition and is epidemiologically linked to a confirmed or probable case. A laboratory confirmed case does not need to meet the clinical case definition.
- *Probable:* a case that meets the clinical case definition, has noncontributory or noserologic or virologic testing, and is not epidemiologically linked to a confirmed or probable case.

Comment

- **Report suspect cases by telephone immediately.**
- All suspected, probable, and confirmed cases of mumps are reportable and reviewed by the KDHE Immunization Program staff for appropriate control measures.

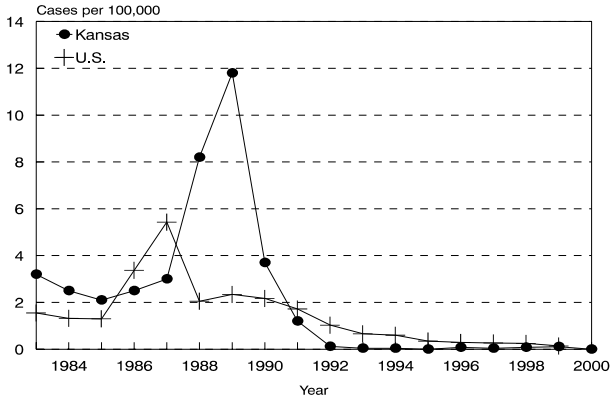
Epidemiology and Trends

1999 Case Total	0
U.S. rate (1999)	0.1 per 100,000

In 2000, there was no reported mumps cases in Kansas. There were significant outbreaks of mumps in Kansas in 1988 and 1989 among under-immunized people. Since 1992, there have been 0-3 cases reported annually in the state.

The national immunization goal for the year 2000 was to achieve a 90% coverage rate among two-year-old children for the complete series of vaccinations. Estimated Kansas immunization coverage rate of the National Immunization Survey for the first dose of the measles, mumps, and rubella vaccine (MMR1) was 86.0 (± 5.1%) in 1999.

Mumps incidence rate by year
Kansas, 1983-2000



PERTUSSIS (WHOOPING COUGH)

Pertussis is a bacterial disease involving the respiratory tract caused by the bacillus *Bordetella pertussis*. Cough is the characteristic symptom, and it can become paroxysmal within one to two weeks. The cough is often followed by a characteristic inspiratory whoop and may be accompanied by post-tussive or vomiting. Although pertussis affects all age groups, it is particularly severe and more commonly recognized and diagnosed in infants and young children. The disease can be fatal in young children. Fever is usually minimal throughout the course. Infants may present with apnea or cyanosis, while adults may present only with a chronic spasmodic cough. The disease is usually less severe among older children and adults. The incubation period is commonly 5 - 10 days, up to 21 days. Transmission is by contact with respiratory secretions of infected persons. Active immunization with five doses of DTaP (diphtheria and tetanus toxoid and acellular pertussis) vaccine at 2, 4, and 6 months, at 12-15 months and at school entry (4-6 years of age) can prevent this disease among young children, who are most severely affected. The efficacy of the vaccine in children who have received at least 3 doses is estimated to be 80%. Immunity begins to wane 3 years after last vaccination. In recent years, pertussis has been increasingly recognized among adolescents and young adults. No pertussis vaccine is available for use after the seventh birthday.

Clinical Criteria

A cough illness lasting $2 weeks with one of the following: paroxysms of coughing, inspiratory "whoop," or post-tussive vomiting, without other apparent cause.

Laboratory Criteria for Surveillance Purposes

- Isolation of *Bordetella pertussis* from clinical specimen ***or***
- Positive polymerase chain reaction for *B. pertussis*.

Surveillance Case Definitions

- *Confirmed:* a case that is laboratory confirmed or one that meets the clinical case definition and is epidemiologically linked to a laboratory-confirmed case.
- *Probable:* a case that meets the clinical case definition, is not laboratory confirmed, and is not epidemiologically linked to a laboratory-confirmed case.

Comment

- **Report suspect cases by telephone immediately.**
- All suspected cases of pertussis are reportable and reviewed by the KDHE Immunization Program staff for appropriate control measures.

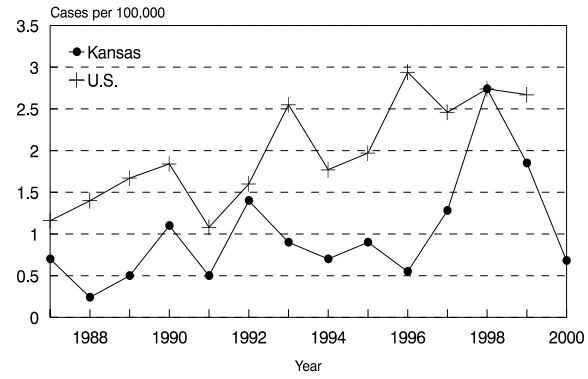
Epidemiology and Trends

2000 Case Total	18
Kansas rate	0.7 per 100,000
U.S. rate (1999)	2.7 per 100,000
Cases by gender	
Female	8
Male	10
Cases by geographic area	
Urban	14
Rural	4

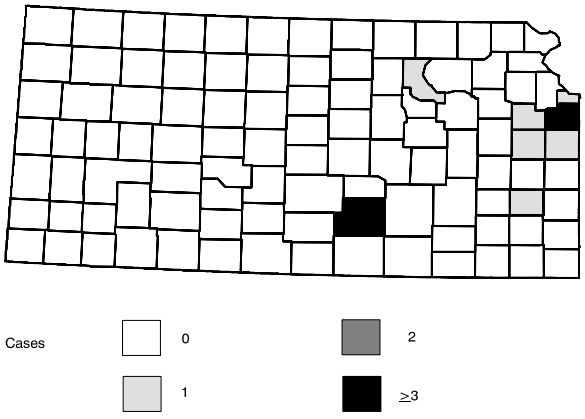
Reported cases of pertussis in Kansas decreased by 63%, with 18 cases in 2000 from 49 cases in 1999. The three-year median for 1997-1999 was 49 cases. The cases ranged in age from infants less than 1 to 8 years of age. The median age was 2 years. The rate among children less than 5 years of age was 9.2 cases per 100,000 population and accounted for 94% of total pertussis morbidity. The ratio of female (8) to male (10) was 1:1.3. The majority of the cases were Whites (89%) and were reported from urban areas. All reported cases were apparently sporadic. No outbreaks were reported.

The national immunization goal for the year 2000 was to achieve a 90% coverage rate among two-year-old children for the complete series of vaccinations. Estimated Kansas immunization coverage rate of the National Immunization Survey for the fourth dose of the diphtheria, tetanus, and pertussis vaccine (DTaP4) was 79.4% (± 6.2%) in 2000.

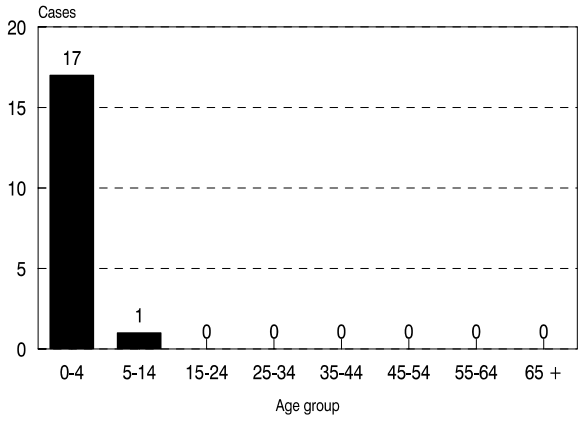
Pertussis incidence rate by year
Kansas, 1987-2000



Pertussis cases by county
Kansas, 2000



Pertussis cases by age group
Kansas, 2000



RABIES, ANIMAL

Rabies is a viral infection caused by a rhabdovirus of the genus *Lyssavirus*. The disease affects the nervous system of mammals. Symptoms may include behavior changes, like unusual aggressiveness or paralysis (frequently beginning in the hind legs or the throat of an animal). Up-to-date vaccinations in dogs, cats, ferrets and livestock prior to exposure can protect these animals against the disease. The incubation period ranges from two weeks to many months. Rabies is almost always fatal once symptoms occur. It is usually transmitted by saliva from an infected animal's bite.
A dog, cat, or ferret inflicting a bite can be observed daily for 10 days following a bite to rule out the risk of rabies transmission. If the animal develops signs of rabies or dies during the period, or belongs to a wildlife or exotic species, it must be euthanized humanely and arrangements must be made for rabies examination. Bats, raccoons, foxes, skunks, and other carnivorous wildlife should be presumed rabid until confirmed negative by laboratory diagnosis. Rodents, rabbits, hares, and opossums rarely transmit rabies, but any animal exhibiting unusual behavior should be suspected of carrying rabies.

Animal heads for rabies examination should be wrapped in several layers of plastic bags, placed in a leak-proof container with frozen gel packs, sealed, placed into a shipping box with a submission form, and sent to:

Veterinary Diagnostic Laboratory/Rabies Laboratory
College of Veterinary Medicine
Kansas State University - V.C.S. Building
1800 North Denison Avenue
Manhattan, KS 66506-5601

Contact the KSU rabies lab (785-532-4483) or KDHE (785-296-2951) for additional information on submitting specimens, or to answer other questions on rabies.

Laboratory Criteria for Surveillance Purposes

- A positive direct fluorescent antibody test (preferably performed on central nervous system tissue), ***or***
- Isolation of rabies virus (in cell culture or in a laboratory animal).

Surveillance Case Definitions

- *Confirmed:* a case that is laboratory confirmed.

Comment

- **Report suspect cases by telephone immediately.**
- More detailed information on rabies in Kansas can be found at: www.vet.ksu.edu/depts/rabies/kansas.htm.

Epidemiology and Trends

2000 Case Total	97
Number of counties reporting rabid animals	36 (34%)
Types of rabid animals	
Wild	68 (71%)
Domestic	
Pets	16 (16%)
Live stock	13 (19%)

In Kansas, 97 laboratory confirmed cases of rabies in animals were reported during 2000, a 9% decrease from 1999 (107). The three-year median for 1997-1999 was 89 cases. Thirty-six counties reported at least one rabid animal. Wildlife species accounted for 68 (71%) of diagnosed cases; 61 skunks accounted for 90% of the wildlife species and 63% of the total. Other wildlife species included bats (7). Twenty-nine rabies cases were among domestic animals with cats (11) being the predominant domestic animal.

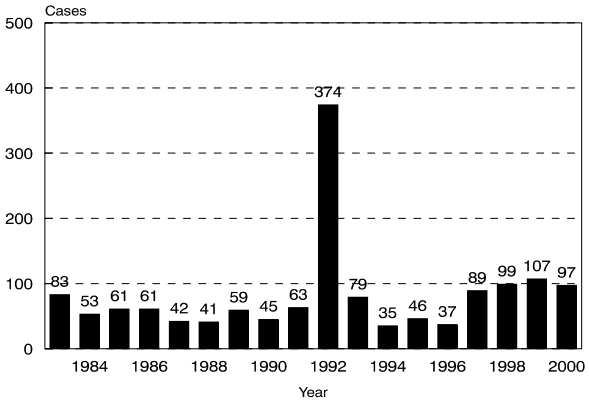
Rabies was not found in the following animals tested in Kansas during the past 10 years (1991-2000):

Antelope, Baboon, Badger, Beaver, Bison, Chipmunk, Coati, Cougar, Deer, Ferret, Ground Squirrel, Gerbil, Goat, Gopher, Groundhog, Guinea Pig, Hamster, Hedgehog, Human, Lion, Llama, Mink, Mole, Mouse, Muskrat, Opossum, Pig, Porcine, Porcupine, Prairie Dog, Primate, Pronghorn, Rabbit, Rat, Ringtail, Rodent, Squirrel, Tiger, Weasel, Wolf, Woodchuck, other rodents/ lagomorphs.

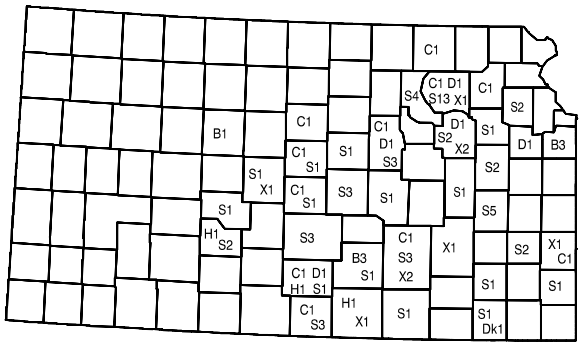
Rabies was found in the following animals tested in Kansas during the past 10 years (1991-2000):

Bat, Bobcat, Cat, Cow, Dog, Donkey, Fox, Horse, Raccoon, Sheep, Skunk.

Animal rabies by year
Kansas, 1983-2000



Animal rabies by species and county
Kansas, 2000



B=bat C=cat D=dog H=horse S=skunk X=cow Dk=donkey

Rabid animals by species
Kansas, 2000

Species	Number Tested	Number Positive	Percent Positive
Bat	146	7	4.8
Cat	766	11	1.4
Cow	59	9	15.3
Dog	569	5	0.9
Donkey	1	1	100.0
Horse	16	3	18.8
Skunk	148	61	41.2

ROCKY MOUNTAIN SPOTTED FEVER

Rocky Mountain Spotted Fever (RMSF) is a disease caused by a rickettsial organism, *Rickettsia rickettsii*. It is most commonly characterized by acute onset of moderate to high fever, and is usually accompanied by myalgia, headache, and petechial rash (on the palms and soles in two thirds of the cases). Symptoms usually appear from 3 to 14 days from the bite of an infected tick and fatalities can occur. One attack probably provides permanent immunity. RMSF is spread by the bite of an infected tick (including *Dermacentor variabilis*, the American dog tick, and *Amblyomma americanum*, the Lone star tick), or by contamination of the skin with tick blood or feces. Person-to-person or animal to human spread of RMSF does not occur. The tick must feed for 10-24 hours before the organism can be transmitted.

Laboratory Criteria for Surveillance Purposes

- Fourfold or greater rise in antibody titer to *Rickettsia rickettsii* antigen by immunofluorescence antibody (IFA), complement fixation (CF), latex agglutination (LA), microagglutination (MA), or indirect hemagglutination antibody (IHA) test in acute- and convalescent-phase specimens ideally taken $3 weeks apart, ***or***
- Positive polymerase chain reaction assay to *R. rickettsii*, ***or***
- Demonstration of positive immunofluorescence of skin lesion (biopsy) or organ tissue (autopsy), ***or***
- Isolation of *R. rickettsii* from clinical specimen.

Surveillance Case Definitions

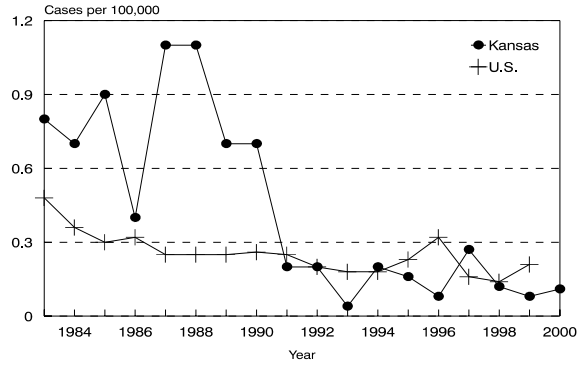
- *Confirmed:* a clinically compatible case that is laboratory confirmed.
- *Probable:* a clinically compatible case with a single IFA serologic titer of $64 or a single CF titer of $16 or other supportive serology (fourfold rise in titer or a single titer $320 by Proteus OX-19 or OX-2, or a single titer $128 by an LA, IHA, or MA test).

Epidemiology and Trends

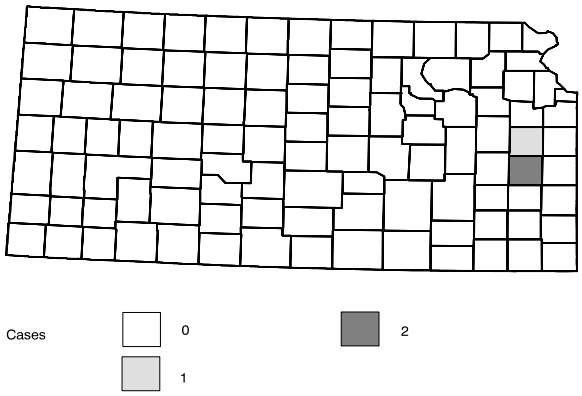
2000 Case Total	3
Kansas rate	0.1 per 100,000
U.S. rate (1999)	0.2 per 100,000

In 2000, there were three cases of RMSF reported as compared to two in 1999. The probable location of exposure for one case was Minnesota and for the other two cases unknown. For the ten year period 1991-2000, 1 to18 cases have been reported annually. The precipitous drop in cases after 1990 may be explained by increased investigation and verification of reported cases resulting in fewer cases meeting the surveillance definition of a confirmed case.

Rocky Mountain Spotted Fever incidence rate by year - Kansas, 1983-2000



Rocky Mountain Spotted Fever cases by county - Kansas, 2000



RUBELLA ("German Measles")

Rubella is a mild febrile viral disease caused by *Rubivirus* species. The symptoms are a fever and rash along with enlarged lymph nodes in the head and neck. While the illness is only rarely serious in children or adults, it can produce congenital anomalies or intrauterine death in women infected during pregnancy. Congenital rubella syndrome (CRS) occurs in up to 90% of infants born to women who acquired confirmed rubella during the first trimester of pregnancy. The incubation period is 16 to 18 days, and transmission is from respiratory or direct contact with infected persons. Rubella can be prevented by vaccination. The current recommendation is a routine two-dose MMR vaccine schedule, with the initial dose administered at 12-15 months of age. The second dose should be given at school entry (4-6 years of age). Vaccine should not be given to anyone who is immunosuppressed, or to pregnant women.

Clinical Criteria

An illness that has **all** the following characteristics: acute onset of generalized maculopapular rash; temperature >99.0 °F (>37.2 °C), if measured; arthralgia/arthritis, lymphadenopathy, or conjunctivitis

Laboratory Criteria for Surveillance Purposes

- Isolation of rubella virus, ***or***
- Significant rise between acute-and convalescent-phase titers in serum rubella immunoglobulin G antibody level by any standard serologic assay, ***or***
- Positive serologic test for rubella immunoglobulin M (IgM) antibody

Surveillance Case Definitions

- *Confirmed:* a case that is laboratory confirmed or that meets the clinical description and is epidemiologically linked to a laboratory-confirmed case
- *Probable:* a case that meets the clinical description, has no or noncontributory serologic or virologic testing, and is not epidemiologically linked to a laboratory-confirmed case
- *Suspected:* any generalized rash illness of acute onset

Comment

- **Report suspect cases by telephone immediately.**
- All suspected cases of rubella are reportable and reviewed by the KDHE Immunization Program staff.

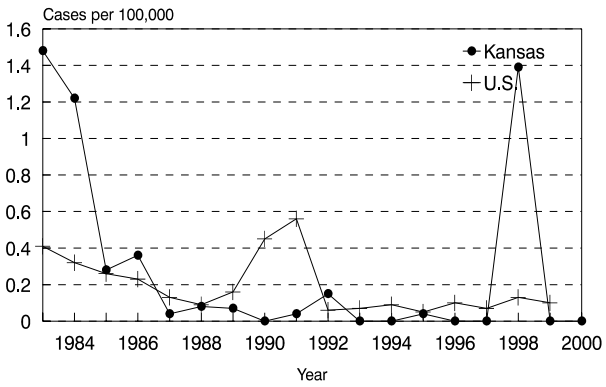
Epidemiology and Trends

2000 Case Total	0
U.S. rate (1999)	0.1 per 100,000

In 2000, there were no reported rubella cases in Kansas. The three-year median for 1997-1999 was 36 cases. There was an outbreak of rubella in 1998 primarily affecting employees of meat-packing plants with no record of any rubella vaccination.

The national immunization goal for the year 2000 was to achieve a 90% coverage rate among two-year-old children for the complete series of vaccinations. Estimated Kansas immunization coverage rate of the National Immunization Survey for the first dose of the measles, mumps, and rubella vaccine (MMR1) was 86.0% (± 5.1%) in 1999.

Rubella incidence rate by year
Kansas, 1983-2000



SALMONELLOSIS (non-typhoidal)

Salmonellosis is an enteric bacterial disease caused by numerous serotypes of *Salmonella*, which can be pathogenic for both animals and people. The symptoms include fever, headache, diarrhea, abdominal pain, nausea, and sometimes vomiting. Young children, people with special health conditions, and the elderly are more likely to experience severe symptoms with complications. The bacteria can cause severe dehydration and may become invasive. Asymptomatic infections can occur. The incubation period ranges from 6 to 72 hours, usually 12-36 hours. The disease is transmitted by ingestion, usually by eating or drinking raw or undercooked eggs, raw milk, contaminated water, meat, or poultry products. In addition, pet reptiles and chicks, and other animals can be sources of these bacteria.

Laboratory Criteria for Surveillance Purposes

- Isolation of *Salmonella spp.* from a clinical specimen.

Surveillance Case Definitions

- *Confirmed:* a case that is laboratory confirmed.
- *Probable:* a clinically compatible case that is epidemiologically linked to a confirmed case.

Comment

C K.A.R. 28-1-18 requires that isolates be sent to Kansas Health and Environmental Laboratory.

Outbreaks

- *Salmonella newport* in Johnson County
  Two patients resident in Johnson County ate at a restaurant in Nashville, Tennessee where a *S. newport* outbreak was documented.

- *Salmonella* Group B in Johnson County
  In the middle of September, 2000, an outbreak attributed to *S.* Group B was associated with a food at a community festival in Johnson County and affected at least 6 people.

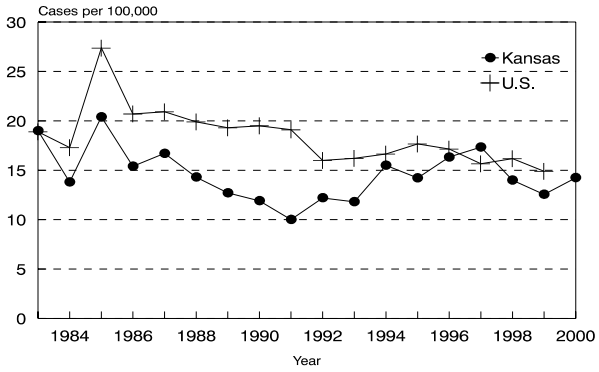
Epidemiology and Trends

2000 Case Total	378
Kansas rate	14.2 per 100,000
U.S. rate (1999)	14.9 per 100,000
Rate by gender	
Female	14.1 per 100,000
Male	13.9 per 100,000
race	
White	9.9 per 100,000
African-American	7.6 per 100,000
Asian/Pacific Islander	4.2 per 100,000
Native American	8.5 per 100,000
Rate by ethnicity	
Hispanic	9.4 per 100,000
Non-Hispanic	8.3 per 100,000
Rate by geographic area	
Urban	13.5 per 100,000
Rural	15.0 per 100,000

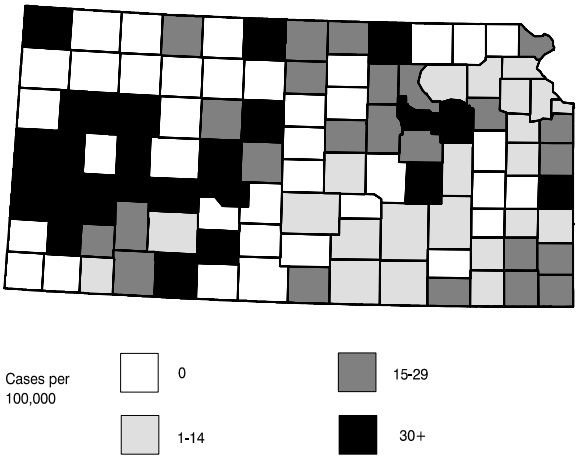
The 378 cases of salmonellosis reported in Kansas represented an 14% increase from the 333 cases reported in 2000. The three-year median for 1997-1999 was 363 cases.

The cases ranged in age from less than 1 to 103 years of age (median age: 26). Salmonellosis occurred in all age groups. However, the highest incidence rate occurred in those less than 5 years (54.9 per 100,000), comprising 27% of the reported cases. The ratio of female to male cases was about one to one. Sixty-four percent of the cases were in Whites, 4% in Hispanic, 3% in African-Americans, <1% each in Native American and in Asian/Pacific Islanders, and in 32% of cases race was not reported.

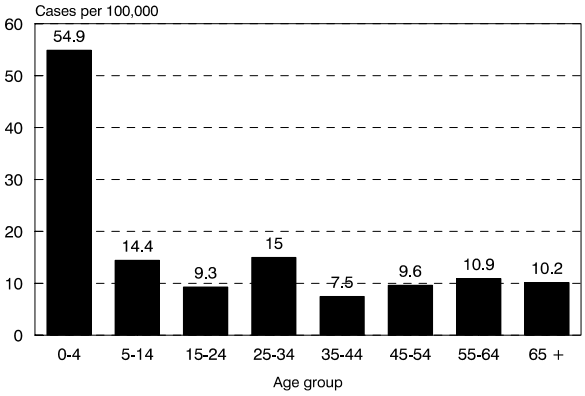
Salmonellosis incidence rate by year
Kansas, 1983-2000



Salmonellosis rate by county
Kansas, 2000



Salmonellosis rate by age group
Kansas, 2000



The serotype was available for 72% (272) of the salmonellosis cases reported. The eight most frequently isolated serotypes were: *S. typhimurium* (98), *S. newport* (52), *S.* Group B (34), *S. enteritidis* (27), *S. heidelberg* (17), *S. javiana* (16), *S. muenchen* (7), *and S. poona* (9).

SHIGELLOSIS

Shigellosis is a bacterial infection affecting the intestinal tract caused by *Shigella* species. *S. dysenteriae*, *S. flexneri*, *S. boydii*, and *S. sonnei* account for most of the cases. Only humans carry *Shigella* bacteria. Symptoms usually include diarrhea which is often bloody, accompanied by fever, nausea, abdominal cramps, and tenesmus; asymptomatic infections may occur. Illness is often self-limiting lasting four to seven days, occasionally up to weeks or months. The incubation period ranges from 12 to 96 hours, but may be as long as one week. Transmission is by the fecal-oral route and very few organisms are needed for infection. The usual mode of transmission is from hands contaminated with human fecal material that are not adequately washed after toileting and subsequently transfer the bacteria to food or water. Direct person-to-person transmission is very common. Flies may transmit the disease by carrying the bacteria on their legs to food.

Laboratory Criteria for Surveillance Purposes

- Isolation of *Shigella spp.* from a clinical specimen.

Surveillance Case Definitions

- *Confirmed:* a case that is laboratory confirmed.
- *Probable:* a clinically compatible case that is epidemiologically linked to a confirmed case.

Comment

- K.A.R. 28-1-18 requires that isolates be sent to the Kansas Health and Environmental Laboratory.

Outbreaks

- *Shigella outbreak in Wyandotte County*

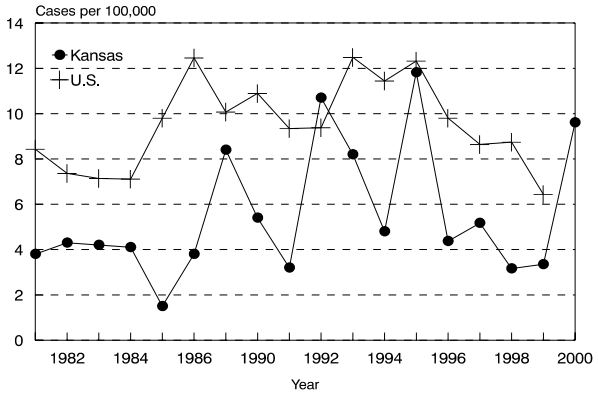
  A shigellosis outbreak was first recognized in Kansas in March with five cases of confirmed Shigella infection reported in Wyandotte County (WY). Despite aggressive public health activity, cases continued to occur in the proceeding months resulting in 141 laboratory-confirmed cases and an additional 125 probable cases for the year in WY, compared to one case in 1999 and seven cases in 1998. Johnson County also saw an increase with 45 confirmed cases. From the onset of the outbreak, race, gender, and age seemed to be significant factors. Of the 266 confirmed and probable cases in WY, 199 (75%) were African-American, though this racial group makes up only 27% of the county's population. The higher reported cases among African-Americans may be due to the outbreak first being uncovered at inner city daycare facilities, with a higher than average African-American population. Active surveillance among the daycares affected may also have increased the numbers. Females composed 163 (61%) of the Wyandotte shigellosis cases in 2000. One

hundred and twenty-eight (48%) of the cases were under the age of six with 197 (74%) under the age of 19. No food source or eating establishment was ever associated with the community-based outbreak.

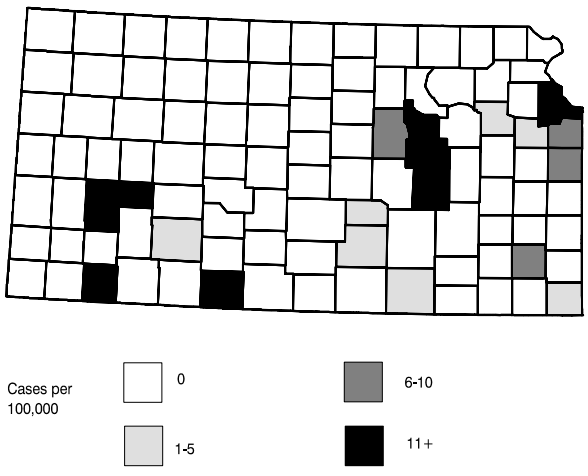
Epidemiology and Trends

2000 Case Total	255
Kansas rate	9.6 per 100,000
U.S. rate (1999)	6.4 per 100,000
Rate by gender	
Female	14.1 per 100,000
Male	13.9 per 100,000
Rate by race	
White	4.1 per 100,000
African-American	68.1 per 100,000
Asian/Pacific Islander	6.3 per 100,000
Rate by ethnicity	
Hispanic	17.5 per 100,000
Non-Hispanic	6.6 per 100,000
Rate by geographic area	
Urban	15.9 per 100,000
Rural	3.5 per 100,000

Shigellosis incidence rate by year
Kansas, 1983-2000



Shigellosis rate by county
Kansas, 2000



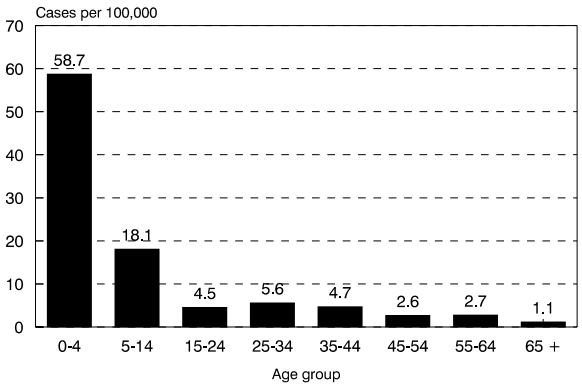
In 2000, there were 255 cases of shigellosis reported in Kansas. This is a significant (187%) increase compared to 89 cases reported in 1999 and is attributed to the outbreak described on the preceding page. The three-year median for 1997-1999 was 89 cases.

The cases ranged in age from less than 1 to 75 years; median age was 6 years. Children less than 5 years comprised 42% of the cases and with the highest age-specific incidence rate, 54.9 case per 100,000 population. Fifty-five

percent of cases were in females. The majority of cases (82%) were reported from urban areas, with Wyandotte (141) and Johnson (45) counties accounting for 74% of the total cases reported and most of them associated with the outbreak described earlier.

The species was identified for 93% of the cases. Of the 236 cases for whom this information was known, 97% were *S. sonnei*, and 3% *S. flexneri*.

Shigellosis rate by age group
Kansas, 2000



STREPTOCOCCAL INVASIVE DISEASE:
Group A *Streptococcus* or *Streptococcus pneumoniae*

Streptococcal invasive disease causes many clinical syndromes, depending on the site of infection (e.g., acute otitis media, pneumonia, bacteremia, or meningitis). "Invasive" refers to Group A *Streptococcus* or *S. pneumoniae* infections involving normally sterile sites (such as blood, cerebrospinal fluid , joint, pleural, or pericardial fluid). Streptococcal invasive disease is characterized typically by sudden onset with a shaking chill, fever, pleural pain, dyspnea, tachypnea, and leukocytosis. The onset may be less abrupt, especially in the elderly. In infants and young children, fever, vomiting and convulsions may be the initial manifestations. Symptoms vary depending on the site and route of infection. The incubation period is not well determined; it may be as short as 14 hours to3 days. Mode of transmission is by droplet spread, by direct oral contact, or indirectly through articles freshly soiled with respiratory discharges. Person-to-person transmission of the organisms is common, but illness in invasive disease among close and casual contacts, and attendants is infrequent.

Laboratory Criteria for Surveillance Purposes

- Isolation of Group A *Streptococcus* (*Streptococcus pyogenes*) or *Streptococcus pneumoniae* from a normally sterile site (e.g., blood, cerebrospinal fluid, or, less commonly, joint, pleural, or pericardial fluid)

Surveillance Case Definitions

- *Confirmed:* a clinically compatible case that is laboratory confirmed.

Comment

- K.A.R. 28-1-18 requires that isolates be sent to the Kansas Health and Environmental Laboratory.

Epidemiology and Trends

2000 Case Total	30
Kansas rate	1.1 per 100,000
U.S. rate	N/A

Cases by gender	
Female	7
Male	23

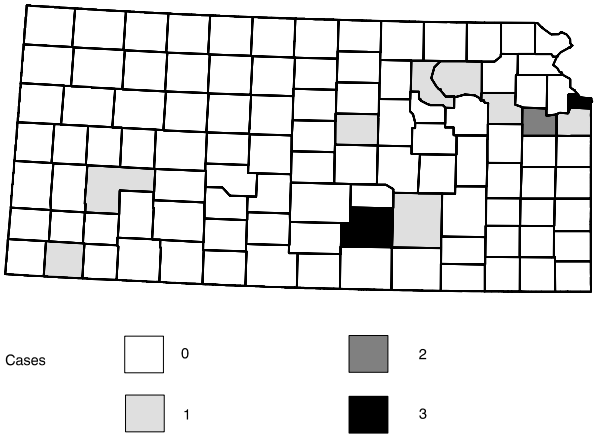
Cases by geographic area	
Urban	21
Rural	9

There were a total of 30 cases of streptococcal invasive disease: 17 cases of Group A. *Streptococcus* and 13 cases of *Streptococcus pneumoniae* (all drug-resistant) were reported. The cases ranged in age from 1 to 91 years; median age was 47 years. The majority of the cases were in male (77%) and reported from urban areas (70%).

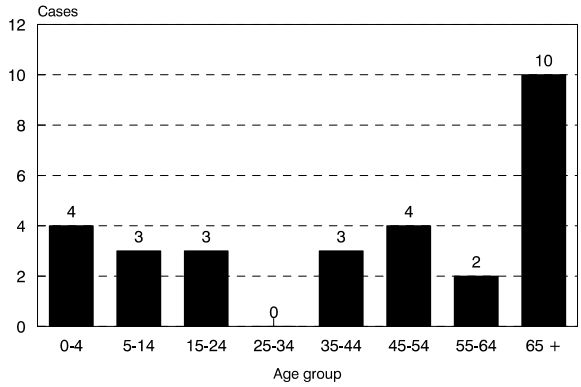
Streptococcal Invasive Disease became reportable in 2000 in Kansas.

No national data available.

Streptococcal invasive disease cases by county Kansas, 2000



Streptococcal invasive disease cases by age group Kansas, 2000



SYPHILIS

Syphilis is a complex sexually transmitted disease caused by the spirochete *Treponema pallidum*. The infection usually progresses through four stages:

- *Primary Syphilis:* the most infectious stage, characterized by one or more chancres (ulcers) that appear 10 to 90 days after exposrure. The chancre appears at the site of exposure and heals within one to four weeks, even without treatment.

- *Secondary Syphilis:* a stage of infection characterized by localized or diffuse mucocutaneous lesions, often with generalized lymphadenopathy. The primary chancre may still be present. The skin eruptions can appear as a variety of different rashes and may begin while the chancre is present. However, it usually starts four weeks after the chancre resolves and can occur up to six months after inoculation. The rash resolves in two to six weeks, but may recur with infectious lesions for the first year of the disease. The most common secondary rash is a maculopapular rash of the palms and soles.

- *Early Latent Syphilis:* occurs when the primary and secondary symptoms resolve and lasts throughout the first year of infection. This stage represents the asymptomatic stage of the infection, however, all serologic tests for syphilis will be positive.

- *Late Syphilis:* characterized by manifestations that occur 5 to 20 years after infection. They include gummas (a lump with gummy contents); destructive lesions of the skin, viscera, bone and mucosa surfaces; cardiovascular syphilis, destructive lesions of the aorta; and neurosyphilis, destruction of areas of the central nervous system including the brain. Late syphilis can cause death or permanent disability.

Fetal infection often occurs in pregnant women with untreated primary, secondary or early latent syphilis. It can also occur, with less frequency, in women who have untreated late latent syphilis. This infection may cause stillbirth, infant death, or severe complications that do not manifest and become apparent until much later in life. Syphilis is transmitted by direct contact with infectious exudates from lesions of the skin and mucous membranes, body fluids and secretions (saliva, semen, blood, vaginal discharges) of infected people during sexual contact. Transmission can occur through blood transfusion if the donor is in the early stages of the disease but is very rare. Fetal infection usually occurs through placental transfer or at delivery.

Laboratory Criteria for Surveillance Purposes

- Demonstration of *T. pallidum* in clinical specimens by darkfield microscopy, direct fluorescent antibody (DFA-TP), or equivalent methods, or by clinical manifestations of acquired infection.

Surveillance Case Definitions

- *Confirmed:* a clinically compatible case that is laboratory confirmed.

Comments

- More detailed information on STDs in Kansas is available at:www.kdhe.state.ks.us/hiv-std.

PRIMARY AND SECONDARY SYPHILIS

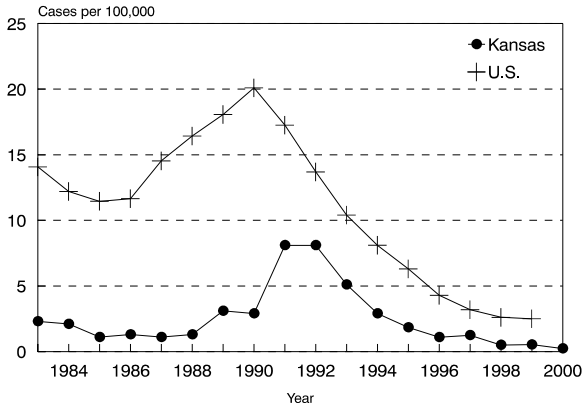
Epidemiology and Trends

2000 Case Total	6
Kansas rate	0.2 per 100,000
U.S. rate (1999)	2.5 per 100,000
Cases by gender	
Female	1
Male	5
Cases by geographic area	
Urban	5
Rural	1

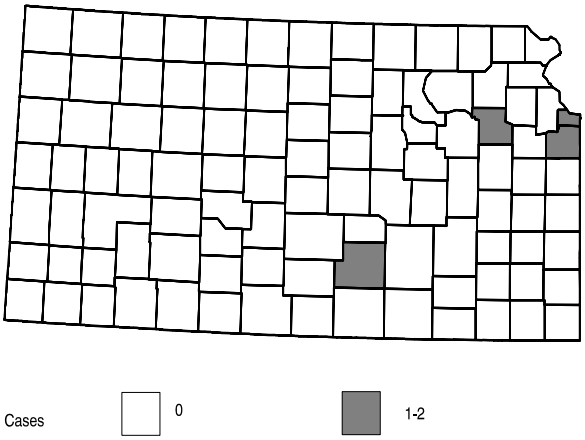
The cases ranged from 22 to 44 years of age. The median age was 27 years. Eighty-three racial/ethnic populations are disproportionately affected by syphilis in Kansas. Thirty-six percent of the cases were African-Americans. Mirroring the trend for gonorrhea, 93% of the cases in the state were reported from the four metropolitan areas.

Primary and secondary cases in Kansas increased dramatically in 1989, followed by a sharp decline beginning in 1993. This decrease mirrors similar trends at the national level. In 2000, the number of reported Kansas cases (6) decreased 57% from 1999 (14), with an incidence rate of 0.2 per 100,000. This is well below the 1998 national rate of 2.5 cases per 100,000 population. The three-year median for 1997-1999 was 14 cases. While accounting for a small proportion of cases among the many reportable STDs in Kansas, syphilis remains important because of its potential for elimination as well as its role as risk factor for HIV infection and transmission.

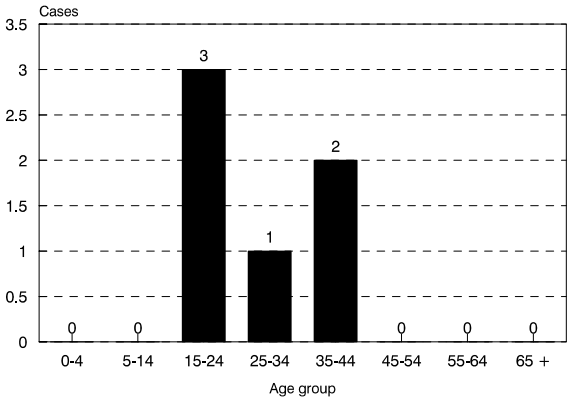
Primary and secondary syphilis incidence rate by year - Kansas, 1983-2000



Primary and secondary syphilis cases by county
Kansas, 2000



Primary and secondary syphilis cases
by age group - Kansas, 2000

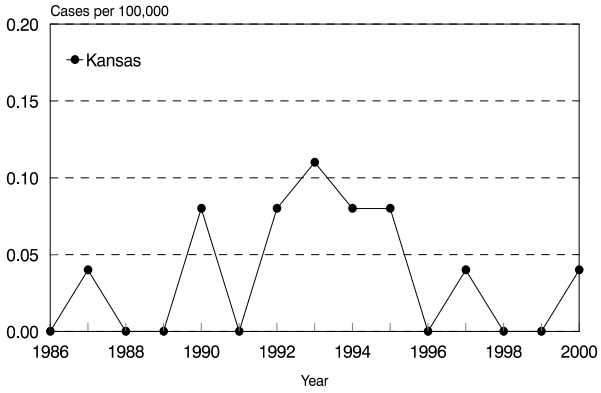


CONGENITAL SYPHILIS

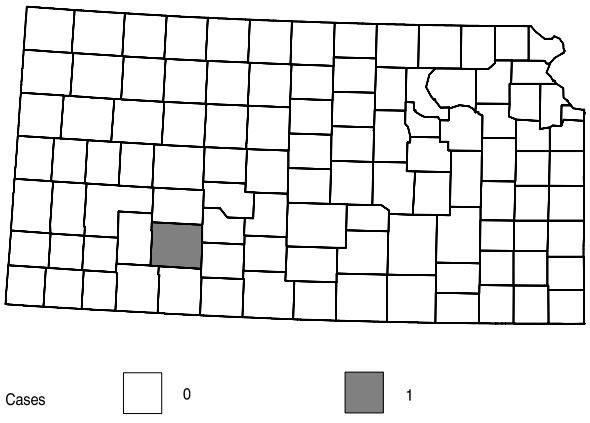
2000 Case Total	1
Kansas rate	<0.1 per 100,000
U.S. rate (1999)	N/A

There was one case of congenital syphilis reported in Kansas. This is the first case of congenital syphilis confirmed in Kansas since 1997.

Congenital Syphilis incidence rate by year
Kansas, 1986-2000



Congenital Syphilis cases by county
Kansas, 2000



TETANUS

Tetanus is an acute disease induced by an exotoxin of the tetanus bacillus, *Clostridium tetani*. It is characterized by an acute onset of hypertonia (extreme tension of the muscles), painful muscular contractions (usually of the muscles of the jaw and neck) and generalized muscle spasms without other apparent medical cause, following the contamination of a wound with *Clostridium tetani*. The incubation period is usually 3-21 days, with an average of 10 days. There is no direct transmission from person to person. A vaccine to prevent tetanus is available.

Tetanus toxoid is administered with diphtheria toxoid and acellular pertussis (DTaP) vaccine as a triple antigen for children <7 years of age. It is routinely administered at 2, 4, and 6 months, with booster doses at 15-18 months of age and school entry (4-6 years of age). Active protection should be maintained by administering booster doses of Td (tetanus diphtheria) every 10 years. Protection with vaccine is recommended for universal use regardless of age. It is especially important for workers in contact with soil, sewage, domestic animals; members of the military forces; policemen and others with greater than usual risk of traumatic injury; and adults $65 years who are currently at highest risk for tetanus and tetanus related mortality. Vaccine induced maternal immunity is important in preventing neonatal tetanus.

Laboratory Criteria for Surveillance Purposes

- Isolation of *Clostridium tetani*.

Surveillance Case Definitions

- *Confirmed:* a clinically compatible case **with or without** laboratory isolation of *Clostridium tetani*.

Comment

- All suspected cases of tetanus are reportable and reviewed by the KDHE Immunization Program staff for appropriate control measure.

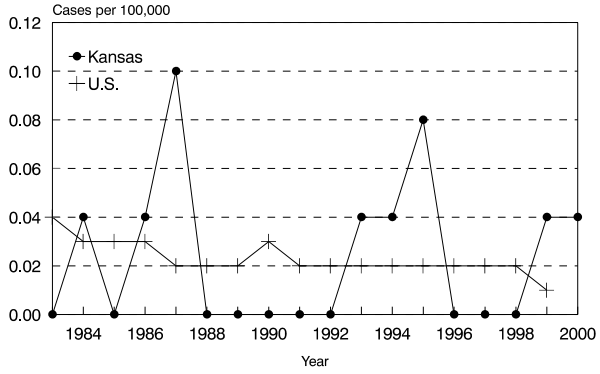
Epidemiology and Trends

2000 Case Total	1
Kansas rate	<0.1 per 100,000
U.S. rate (1999)	<0.1 per 100,000

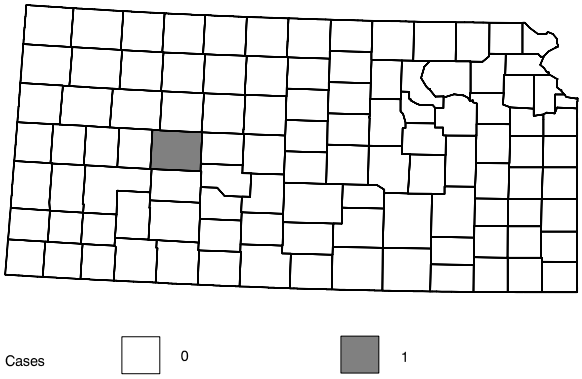
A total of 7 cases of tetanus were reported in Kansas between 1991 and 2000 all among adults. In 2000, there was one tetanus case reported. The case had no documentation of tetanus vaccination.

The national immunization goal for the year 2000 is to achieve a 90% coverage rate among two-year-old children for the complete series of vaccinations. Estimated Kansas immunization coverage rate of the National Immunization Survey for the fourth dose of the diphtheria, tetanus, and pertussis vaccine (DTaP4) was 79.4% (± 6.2%) in 2000.

Tetanus incidence rate by year
Kansas, 1983-2000



Tetanus cases by county
Kansas, 2000



TOXIC SHOCK SYNDROME, streptococcal and staphylococcal

Toxic-shock syndrome (TSS) is a severe illness associated with invasive or noninvasive group A streptococcal (*Streptococcus pyogenes*) and staphylococcal infections. The illness may occur with infection at any site but most often occurs in association with infection of a cutaneous lesion. Signs of toxicity and a rapidly progressive clinical course are characteristic, and the case-fatality rate may exceed 50%. TSS is characterized by sudden onset of high fever, vomiting, profuse watery diarrhea, myalgia and hypotension, and shock. A rash, which may result in desquamation of the skin, occurs in the first two weeks of illness. The incubation period is usually 1-3 days. Strains of TSS bacteria are rarely present in vaginal cultures from healthy women, but are regularly recovered from women with menstrually associated TSS or in those with TSS following gynecologic surgery. Although almost early cases of TSS occurred in women during menstruation, and most were associated with vaginal tampon use, only 55% of cases now reported are associated with menses.

Clinical Criteria

An illness with the following clinical manifestations:

- *Fever:* temperature $102.0 F ($38.9 C).
- *Rash:* diffuse macular erythroderma.
- *Desquamation:* 1-2 weeks after onset of illness, particularly on the palms and soles.
- *Hypotension:* systolic blood pressure $\leq$90 mm Hg for adults or less than fifth percentile by age for children aged <16 years; orthostatic drop in diastolic blood pressure $\geq$15 mm Hg from lying to sitting, orthostatic syncope, or orthostatic dizziness.
- *Multisystem involvement* -- three or more of the following:

  Gastrointestinal: vomiting or diarrhea at onset of illness.

  Muscular: severe myalgia or creatine phosphokinase level at least twice the upper limit of normal for laboratory.

  Renal: blood urea nitrogen or creatine at least twice the upper limit for normal for laboratory or urinary sediment with pyuira ($\geq$5 leukocytes per high-power field) in the absence of urinary tract infection.

  Hepatic: total bilirubin, serum glutamic-oxaloacetic transaminase (SGOT), or serum glutamic-pyruvic transaminase (SGPT) at least twice the upper limit of normal for laboratory.

  Central Nervous System: disorientation or alterations in consciousness without focal neurologic signs when fever and hypotension are absent.

Laboratory Criteria for Surveillance Purposes

Negative results on the following tests, if obtained:

- Blood, throat, or cerebrospinal fluid cultures (blood culture may be positive for *Staphylococcus aureus*).
- Rise in titer to Rocky Mountain Spotted Fever, leptospirosis, or measles.

Surveillance Case Definitions

- *Confirmed:* a case in which all of the clinical findings described above are present, including desquamation, unless the patient dies before desquamation occurs.
- *Probable:* a case in which clinical findings described above are present.

Epidemiology and Trends

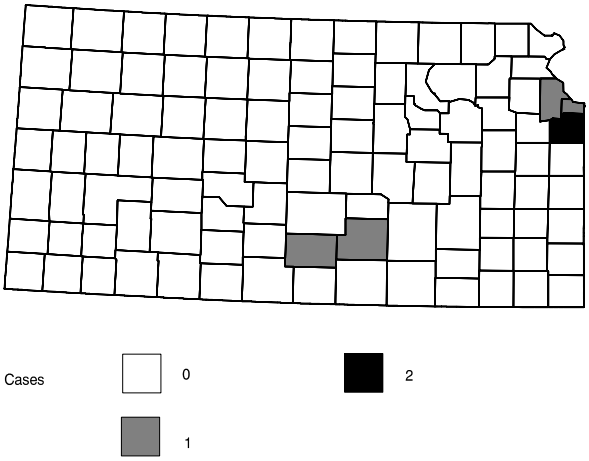
2000 Case Total	6
Kansas rate	0.2 per 100,000
U.S. rate (1999)	0.1 per 100,000

Cases by gender	
Female	2
Male	4

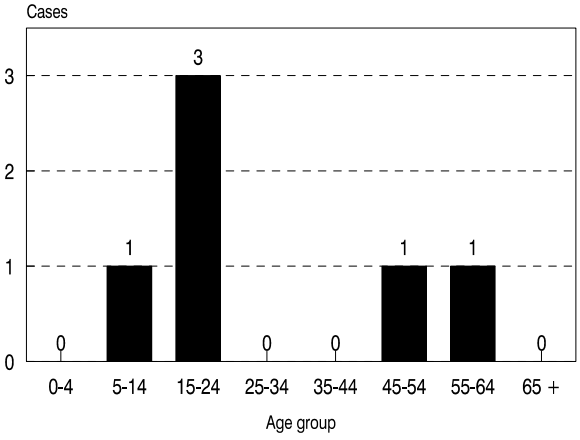
Cases by geographic area	
Urban	4
Rural	2

There were 6 cases of toxic shock syndrome reported in 2000. Four *streptococcus*, and three *staphylococcus aureus* were identified as the cause of illness. The cases ranged in age from 11 to 64 years. The median was 19 years. Five were hospitalized, and two deaths were reported.

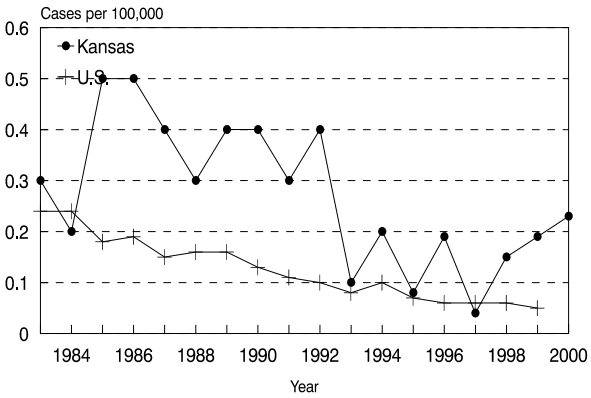
Toxic shock syndrome cases by county
Kansas, 2000



Toxic shock syndrome cases
by age group - Kansas, 2000



Toxic Shock Syndrome incidence rate by year
Kansas, 1983-2000



TUBERCULOSIS (TB)

Tuberculosis is a disease caused by a *Mycobacterium tuberculosis* complex that can be spread from person to person through the air. This complex includes *M. Tuberculosis* and *M. Africanum* primarily from humans, and *M. Bovis* primarily from cattle. The most common site of disease is the lungs (pulmonary TB), but other organs (extrapulmonary TB) may be involved (e.g., brain, lymph nodes, kidneys, bones, joints, larynx, intestines, eyes). Tuberculosis is transmitted by exposure to tubercle bacilli through inhalation in airborne droplet nuclei from people with active pulmonary TB. Prolonged close contact with these cases may lead to infection. Systemic symptoms include low-grade fever, night sweats, fatigue, and weight loss. In pulmonary or laryngeal TB, there may also be hemoptysis (i.e., bloody sputum), a persistent and productive cough, chest pain, and shortness of breath. The incubation period is about 2-12 weeks from infection to demonstrable primary lesion or significant tuberculin reaction. Epidemics of tuberculosis have occurred among individuals in enclosed places, such as nursing homes, jails, hospitals, schools, office buildings, and factories. There are multi-drug resistant (i.e., resistant to both isoniazid and rifampin) forms of *M. tuberculosis*, fortunately very rare in Kansas.

Clinical Criteria

A case that meets the following criteria:

- A positive tuberculin skin test.
- Other signs and symptoms compatible with tuberculosis (e.g., an abnormal, unstable [i.e., worsening or improving] chest radiographs, or clinical evidence of current disease).
- Treatment with two or more antituberculosis medications.
- Completed diagnostic evaluation.

Laboratory Criteria for Surveillance Purposes

- Isolation of *M. tuberculosis* from a clinical specimen ***or***
- Demonstration of *M. tuberculosis* from a clinical specimen by nucleic acid amplification test, ***or***
- Demonstration of acid-fast bacilli in a clinical specimen when a culture has not been or cannot be obtained.

Surveillance Case Definitions

- *Confirmed:* a case that meets the clinical case criteria or is laboratory confirmed.

Comment

- **Report suspect cases by telephone immediately.**
- K.A.R. 28-1-18 requires isolates be sent to the Kansas Health and Environmental Laboratory.
- A cluster of cases of TB associated with exotic dancers in Kansas was investigated and reported in MMWR Vol.50, No.15;291 04/20/2001.

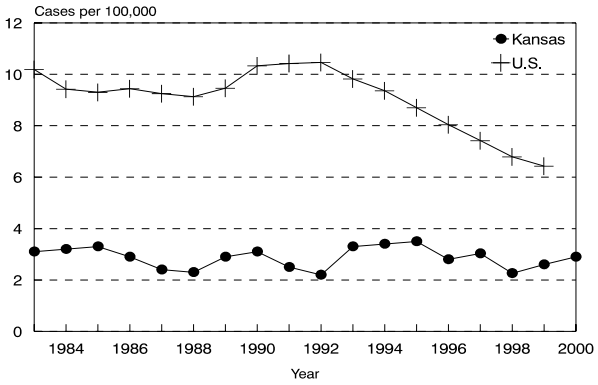
Epidemiology and Trends

2000 Total Case	77
Kansas rate	2.9 per 100,000
U.S. rate (1999)	6.4 per 100,000
Rate by gender	
Female	2.4 per 100,000
Male	3.4 per 100,000
Rate by race	
White	0.9 per 100,000
African-American	10.2 per 100,000
Asian/Pacific Islander	52.3 per 100,000
Rate by ethnicity	
Hispanic	9.4 per 100,000
Non-Hispanic	2.5 per 100,000
Rate by geographic area	
Urban	4.1 per 100,000
Rural	1.7 per 100,000

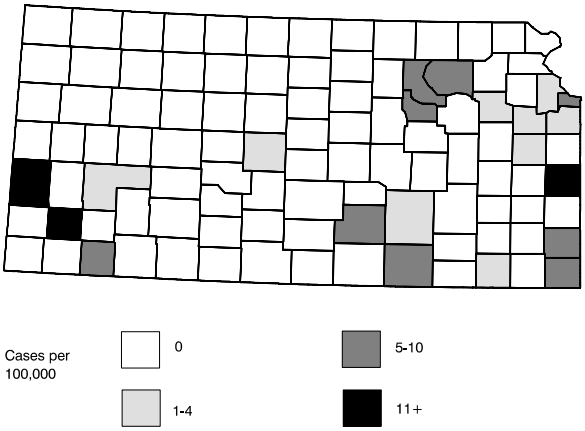
There were 77 reported cases of active TB disease in 2000, up from 69 cases in 1999. The three-year median for 1997-1999 was 69 cases. Cases ranged in age from 1 to 90 years of age; the median age was 42 years. Fifty-eight percent of cases (45) were males. TB cases in Kansas are not evenly distributed among the various racial and ethnic groups. The distribution was 22 Whites (29%), 25 Asian/Pacific Islanders (32%), 14 Hispanics (18%), and 16 African-Americans (21%). Members of African-American and Asian/Pacific Islander population were disproportionately affected by TB during 2000. There were 39 out of 77 cases that occurred among foreign-born individuals in Kansas.

Sedgwick County reported the highest number of new cases of TB disease in 2000, with 28

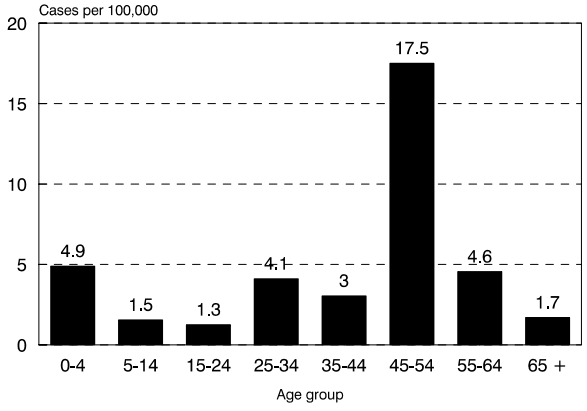
Tuberculosis incidence rate by year
Kansas, 1983-2000



Tuberculosis rate by county
Kansas, 2000



Tuberculosis rate by age group
Kansas, 2000



(6.2 cases per 100,000 population). Two metropolitan Kansas counties reported increases during 2000: Johnson reported 12 cases, up from five in 1999, and Wyandotte reported 11 cases, up from four in 1999.

In 2000, five cases were reported in Kansas among children under the age of 14, as compared with 15 cases in 1999. One of the pediatric cases was discovered as a result of the investigation of another active case, and one child was identified through school entry testing. There were 51 cases of pulmonary, 22 cases of extrapulmonary TB, and 4 undetermined. There were two cases of TB-HIV co-infection, as compared with three casese in 1999. No cases of multi-drug resistant TB were reported in Kansas in 2000.

TULAREMIA

Tularemia is caused by the bacterium *Francisella tularensis*, with a variety of clinical presentations depending on route of exposure symptoms include lymphadenopathy, with or without cutaneous ulceration; pharyngitis, sepsis, intestinal signs, pneumonic disease, and a typhoidal illness without localizing signs. It is transmitted by arthropods, inoculation, when handling contaminated material, by drinking contaminated water, ingesting contaminated food, inhalation of the organism in contaminated dust, or by bites of contaminated animals. The incubation period ranges from1-14 days, usually 3-5 days. Clinical diagnosis is supported by evidence or history of a tick or deerfly bite, exposure to tissues of a mammalian host of *Francisella tularensis*, or exposure to potentially contaminated water. People who spend a great deal of time outdoors are at greater risk of exposure to tularemia. In the U.S.A., tularemia occurs in all months of the year; incidence may be higher in adults in early winter during rabbit hunting season and in children during the summer when ticks and deer flies are abundant.

Laboratory Criteria for Surveillance Purposes

Confirmatory

- Isolation of *F. tularensis* from a clinical specimen, ***or***
- Fourfold or greater change in serum antibody titer to *F. tularensis* antigen

Presumptive

- Elevated serum antibody titer(s) to *F. tularensis* antigen (without documented fourfold or greater change) in a patient with no history of tularemia vaccination ***or***
- Detection of *F. tularensis* in a clinical specimen by fluorescent assay

Surveillance Case Definitions

- *Confirmed:* a clinically compatible illness that is laboratory confirmed
- *Probable:* a clinically compatible case with laboratory results indicative of presumptive infection

Note: Tularemia is not a nationally notifiable disease but is reportable in Kansas.

Epidemiology and Trends

2000 Case Total	11
Kansas rate	0.4 per 100,000
U.S. rate (1999)	N/A

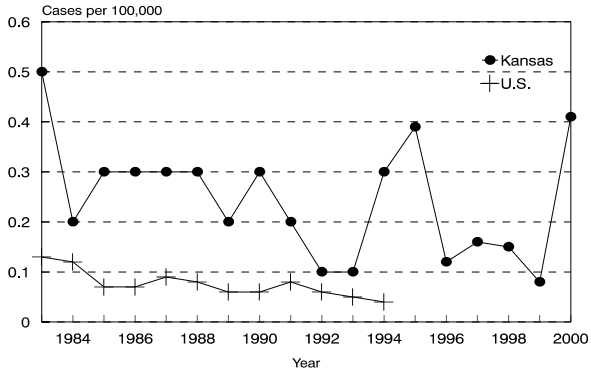
Cases by gender	
Female	3
Male	8

Cases by geographic area	
Urban	1
Rural	10

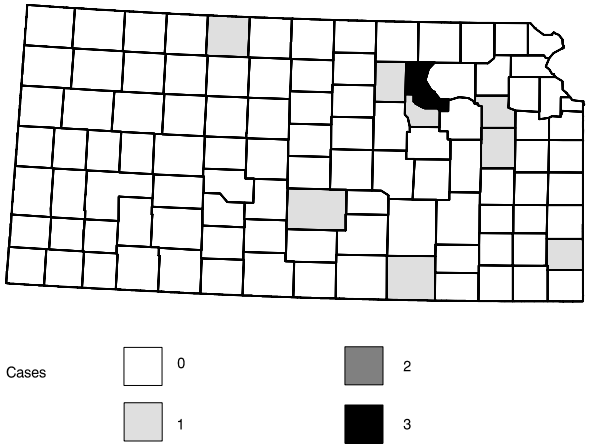
In 2000, there were 11 confirmed cases of tularemia reported, and only two confirmed cases reported in 1999. The three year median for 1997-1999 was 4 cases. Fifty-two cases of Tularemia were reported in Kansas for the ten year period 1990-2000; 3-11 cases were reported annually.

There was a corresponding increase in tularemia cases seen among animals at the Kansas State University diagnostic laboratory. It is possible that an increased number of ticks led to increased number of cases.

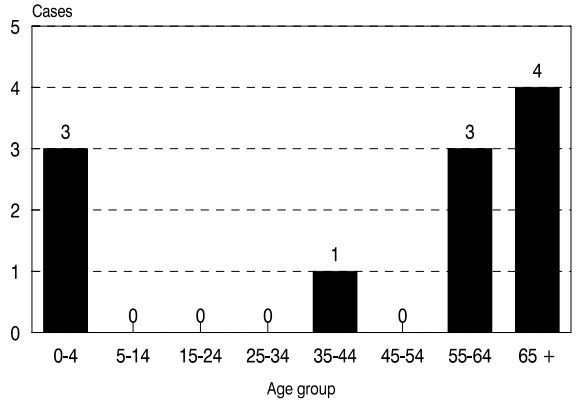
Tularemia incidence rate by year
Kansas, 1983-2000



Tularemia cases by county
Kansas, 2000



Tularemia Cases by age group
Kansas, 2000



TYPHOID FEVER

Typhoid fever is an illness caused by *Salmonella typhi* that is often characterized by insidious onset of sustained fever, headache, malaise, anorexia, relative bradycardia, constipation or diarrhea, and nonproductive cough. However, many mild and atypical infections occur. Carriage of *S. typhi* may be prolonged. The incubation period depends on the size of the infecting dose; from 3 days to 3 months with a usual range of 1-3 weeks; for paratyphoidal gastroenteritis, 1-10 days. Transmission is through food and water contaminated by feces and urine of patients and carriers. A vaccine is available but is generally reserved for people traveling to underdeveloped countries where significant exposure may occur. Strict attention to food and water precautions while traveling to such countries is the most effective preventive method.

Laboratory Criteria for Confirmation

- Isolation of *S. typhi* from blood, stool, or other clinical specimen.

Surveillance Case Definitions

- *Confirmed:* a clinically compatible case that is laboratory confirmed
- *Probable:* a clinically compatible case that is epidemiologically linked to a confirmed case in an outbreak

Comment

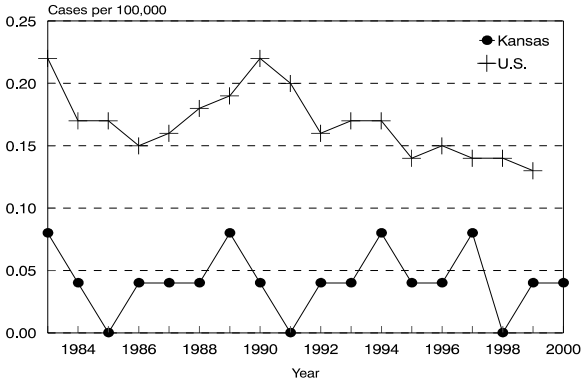
- Isolation of the organism is required for confirmation. Serologic evidence alone is not sufficient for diagnosis. Asymptomatic carriage should *not* be reported as typhoid fever. Isolates of *S. typhi* are sent to the Kansas Health and Environmental Laboratory.

Epidemiology and Trends

2000 Case Total	1
Kansas rate	<0.1 per 100,000
U.S. rate (1999)	0.1 per 100,000

There was one case of typhoid fever reported in 2000. The case was acquired outside of the U.S. Ten cases of typhoid fever were reported in Kansas for the ten year period 1990-2000; 0-2 cases were reported annually.

Typhoid fever incidence rate by year of report
Kansas, 1983-2000



The following diseases are reportable, but had no cases reported in 2000.

Disease	Year last case reported
• Anthrax	1972
• Botulism	1996
• Chancroid	1998
• Cholera	1988
• Diphtheria	1964
• Ehrlichiosis	First reportable in 2000.
• Encephalitis, infectous	1999
• Leprosy (Hansen's Disease)	1999
• Listeriosis	First reportable in 2000.
• Mumps	1999
• Plague	Unknown
• Poliomyelitis*	1967
• Psittacosis	1992
• Rabies, human	1968
• Rubella	1998
• Trichinosis	1999
• Varicella (chicken pox) deaths	Unknown
• Yellow fever	Unknown

*Poliomyelitis caused by wild virus has been considered eradicated from the Western hemisphere since 1979. A worldwide polio eradication effort is currently underway.

SECTION II

TABLES

LIST OF REPORTABLE DISEASES IN KANSAS, 2000

Reportable by health care providers, hospitals, and laboratories
(K.S.A. 65-118, 65-128, 65-6001 through 65-6007, K.A.R. 28-1-2, 28-1-4, 28-1-18)

- Acquired Immune Deficiency Syndrome (AIDS)
- Amebiasis
- ***Anthrax***
- ***Botulism***
- Brucellosis
- Campylobacteriosis
- ***Chancroid***
- Chlamydia trachomatis infection
- ***Cholera***
- Cryptosporidiosis
- Diphtheria
- Ehrlichiosis
- Encephalitis, infectious (indicate infectious agent whenever possible)
- *Escherichia coli* O157:H7 and other enterohemorrhagic, enteropathogenic and enteroinvasive *E. coli* ¶
- Giardiasis
- Gonorrhea
- *Haemophilus influenzae*, invasive disease
- Hantavirus pulmonary syndrome
- Hemolytic uremic syndrome, postdiarrheal
- Hepatitis, viral (acute and chronic)
- Human Immunodeficiency Virus (HIV)
- Legionellosis
- Leprosy (Hansen's disease)
- Listeriosis
- Lyme disease
- Malaria
- ***Measles*** (rubeola)
- ***Meningitis, bacterial***
- ***Meningococcemia*** ¶
- ***Mumps***
- ***Pertussis*** (whooping cough)
- ***Plague***
- ***Poliomyelitis***
- Psittacosis
- ***Rabies, human and animal***
- Rocky Mountain Spotted Fever
- ***Rubella***, including congenital rubella syndrome
- Salmonellosis, including typhoid fever ¶
- Shigellosis ¶
- Streptococcal invasive disease, Group A *streptococcus* or *Streptococcus* pneumoniae ¶

- Syphilis, including congenital syphilis
- Tetanus
- Toxic shock syndrome, streptococcal and staphylococcal
- Trichinosis
- ***Tuberculosi***s ¶
- Tularemia
- Varicella (chickenpox) deaths
- Yellow Fever

Outbreaks, unusual occurrence of any disease, exotic or newly recognized diseases, and suspected acts of terrorism should immediately be reported by telephone (1-877-427-7317).

Bold -- Immediate telephone report of *suspect or confirmed* cases required to KDHE toll free at: 1-877-427-7.

¶ Isolates must be sent to the Kansas Health and Environmental Laboratory.

Division of Health and Environmental Laboratories
Kansas Department of Health and Environment
Forbes Field, Building #740
Topeka, Kansas 66620-0001
Tel: (785) 296-1636

Disease Reporting and Public Health Emergencies:

- Toll-Free Phone 1-877-427-7317
- Toll-Free Fax 1-877-427-7318

Additional conditions reportable by laboratories (K.A.R. 28-1-18 effective August 16, 1993 and 28-1-18 effective February 18, 2000)

- Blood lead level ($10 : g/dL for children <18 years of age; $25 : g/dL for persons ≥ 18 years of age).
- CD4+ T-lymphocyte count <500/ : l or CD4+ T-lymphocyte <29% of total lymphocytes.

Additional conditions reportable by hospitals (K.A.R. 28-1-4 effective May 1, 1986 and 28-1-22 effective December 24, 1990)

- Cancer
- Congenital malformations in infants under one year of age
- Fetal alcohol syndrome

LIST OF REPORTABLE DISEASES IN KANSAS, 2001

REPORTABLE DISEASES IN KANSAS for health care providers, hospitals, and laboratories (K.S.A. 65-118, 65-128, 65-6001 through 65-6007, K.A.R. 28-1-2, 28-1-18)

Acquired Immune Deficiency Syndrome (AIDS);
Amebiasis;
Anthrax;
Botulism;
Brucellosis;
Campylobacter infections;
Chancroid;
Chlamydia trachomatis genital infection;
Cholera;
Cryptosporidiosis**;**
Diphtheria***;***
Ehrlichiosis;
Encephalitis, infectious;
Eschericia coli O157:H7 and other enterohemorrhagic, enteropathogenic and enteroinvasive *E. coli*; ¶
Giardiasis;
Gonorrhea;
Haemophilus influenza, invasive disease;
Hantavirus Pulmonary Syndrome;
Hemolytic uremic syndrome, postdiarrheal;
Hepatitis, viral (acute and chronic);
Human Immunodeficiency Virus (HIV) ;
Legionellosis;
Leprosy (Hansen disease);
Listeriosis;
Lyme disease;
Malaria;
Measles (rubeola);
Meningitis, bacterial;
Meningococcemia; ¶
Mumps;
Pertussis (whooping cough)***;***
Plague;
Poliomyelitis;
Psittacosis;
Q Fever;
Rabies, human and animal;
Rocky Mountain Spotted Fever;
Rubella, including congenital rubella syndrome;
Salmonellosis, including typhoid fever; ¶
Shigellosis; ¶
Smallpox;
Streptococcal invasive disease, Group A *Streptococcus* or *Streptococcus pneumoniae*; ¶
Syphilis, including congenital syphilis;
Tetanus;
Toxic shock syndrome, streptococcal and staphylococcal
Trichinosis;
Tuberculosis; ¶
Tularemia;
Varicella (chickenpox) deaths;
Viral hemorrhagic fever;
Yellow fever.

Bold--Immediate telephone report of *suspect* or *confirmed* cases to KDHE toll free at 1-877-427-7317.

¶ Isolates must be sent to: Division of Health and Environmental Laboratories, Kansas Department of Health and Environment, Forbes Field, Building #740, Topeka, KS 66620-0001, (785) 296-1636.

Outbreaks, unusual occurrence of any disease, exotic or newly recognized diseases, and suspect acts of terrorism should immediately be reported by telephone: 1-877-427-7317 (toll free).

In addition, laboratories must report:
Blood lead level ($10 ∶g/dl for children <18 years; $25 ∶g/dl for persons $18 years)
CD4+ T-lymphocyte count < 500/ ∶l or CD4+ T-lymphocytes <29% of total lymphocytes

Mail reports to your local health department or to: BEDP - Epidemiologic Services Section, 900 SW Jackson, Suite 1051, Topeka, KS 66612-1290. Reports can also be faxed to: 1-877-427-7318 (toll free).

For more information contact your local health department or call the Kansas Department of Health and Environment, Bureau of Epidemiology and Disease Prevention at: 785-296-2951.

(Rev 1/01)

COUNTY ABBREVIATIONS

AL	Allen
AN	Anderson
AT	Atchison
BA	Barber
BT	Barton
BB	Bourbon
BR	Brown
BU	Butler
CS	Chase
CQ	Chatauqua
CK	Cherokee
CN	Cheyenne
CA	Clark
CY	Clay
CD	Cloud
CF	Coffey
CM	Comanche
CL	Cowley
CR	Crawford
DC	Decatur
DK	Dickinson
DP	Doniphan
DG	Douglas
ED	Edwards
EK	Elk
EL	Ellis
EW	Ellsworth
FI	Finney
FO	Ford
FR	Franklin
GE	Geary
GO	Gove
GH	Graham
GT	Grant
GY	Gray
GL	Greeley
GW	Greenwood
HM	Hamilton
HP	Harper
HV	Harvey
HS	Haskell
HG	Hodgeman
JA	Jackson
JF	Jefferson
JW	Jewell
JO	Johnson
KE	Kearny
KM	Kingman
KW	Kiowa
LB	Labette
LE	Lane
LV	Leavenworth
LC	Lincoln
LN	Linn
LG	Logan
LY	Lyon
MN	Marion
MS	Marshall
MP	McPherson
ME	Meade
MI	Miami
MC	Mitchell
MG	Montgomery
MR	Morris
MT	Morton
NM	Nemaha
NO	Neosho
NS	Ness
NT	Norton
OS	Osage
OB	Osborne
OT	Ottawa
PN	Pawnee
PL	Phillips
PT	Pottawatomie
PR	Pratt
RA	Rawlins
RN	Reno
RP	Republic
RC	Rice
RL	Riley
RO	Rooks
RH	Rush
RS	Russell
SA	Saline
SC	Scott
SG	Sedgwick
SW	Seward
SN	Shawnee
SD	Sheridan
SH	Sherman
SM	Smith
SF	Stafford
ST	Stanton
SV	Stevens
SU	Sumner
TH	Thomas
TR	Trego
WB	Wabaunsee
WA	Wallace
WS	Washington
WH	Wichita
WL	Wilson
WO	Woodson
WY	Wyandotte

MAP OF KANSAS

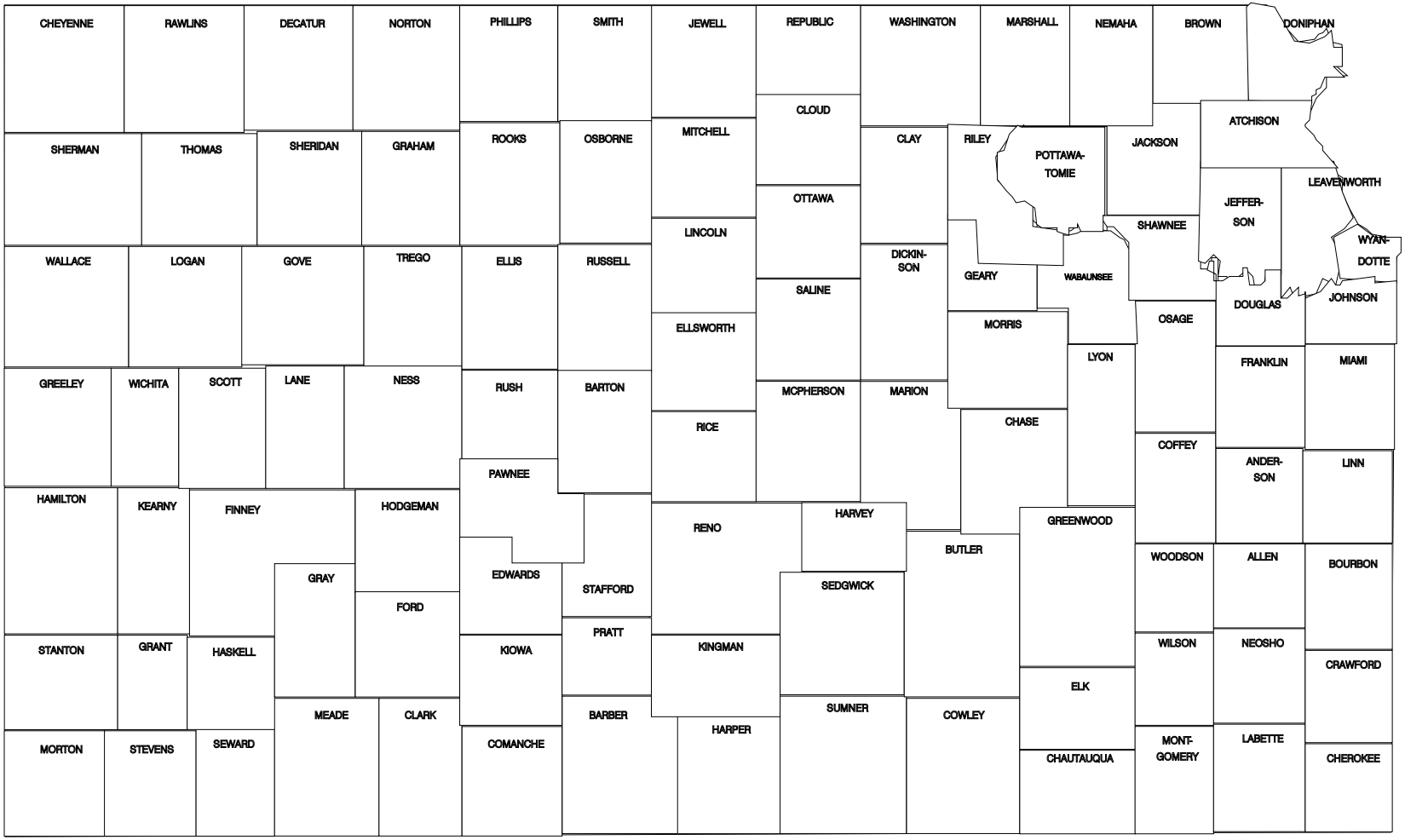


TABLE 1. CASES OF REPORTABLE DISEASES BY YEAR IN KANSAS, 1991-2000

DISEASE	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
AIDS/HIV*	93	188	358	227	286	135	145	87	127	289
AMEBIASIS	1	1	22	15	2	8	9	5	9	5
ANTHRAX	0	0	0	0	0	0	0	0	0	0
BOTULISM, FOODBORNE	0	0	0	0	1	0	0	0	0	0
BOTULISM, INFANT	0	1	0	2	0	1	0	0	0	0
BOTULISM, OTHER	1	0	0	0	0	0	0	0	0	0
BRUCELLOSIS	0	0	0	0	0	1	0	0	0	1
CAMPYLOBACTERIOSIS	200	253	201	247	238	208	200	351	290	355
CHANCROID	5	3	1	5	2	2	0	1	0	0
CHLAMYDIA	6791	7024	5694	6393	5315	4448	4698	5446	6093	6057
CHOLERA	0	0	0	0	0	0	0	0	0	0
CRYPTOSPORIDIOSIS	-	-	-	1	31	11	14	11	2	9
DIPHTHERIA	0	0	0	0	0	0	0	0	0	0
E. coli O157:H7	4	4	11	25	29	33	30	39	31	31
EHRLICHIOSIS**	-	-	-	-	-	-	-	-	-	0
ENCEPHALITIS, INFECTIOUS	5	5	7	7	11	2	2	1	1	0
ENCEPHALITIS, SLE	0	0	0	0	0	0	0	0	0	0
ENCEPHALITIS, WEE	0	0	0	0	0	0	0	0	0	0
GIARDIASIS	309	521	385	415	395	237	230	226	220	205
GONORRHEA	4637	4404	3710	3682	2797	2043	2094	2574	2665	2795

* HIV became reportable in July, 2000.
** Ehrlichiosis became reportable in 2000.

TABLE 1. CASES OF REPORTABLE DISEASES BY YEAR IN KANSAS, 1991-2000

DISEASE	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
HANSEN'S DISEASE	0	0	0	0	0	0	0	0	1	0
HANTAVIRUS PULM. SYN.	-	-	1	4	0	2	2	2	2	1
HEPATITIS A	89	141	79	111	162	393	262	109	66	111
HEPATITIS B, ACUTE	56	66	65	31	53	32	32	28	17	27
HEP, C/NON-A NON-B, ACUTE	20	16	16	18	18	16	13	2	1	9
LEAD $ 10 :g/dL	-	-	545	1034	1202	1171	779	886	770	94—
LEGIONELLOSIS	4	5	7	6	8	6	7	11	0	4
LYME DISEASE	22	18	55	17	23	36	4	11	16	17
MALARIA	8	6	3	7	3	7	4	10	5	7
MEASLES	13	1	2	1	1	1	0	0	0	2
MENINGITIS, HIB	19	12	4	3	2	3	0	1	2	0
MENINGITIS, OTHER	35	21	26	42	9	18	52	25	28	22
MENINGOCOCCAL DISEASE	26	17	36	28	28	27	26	37	23	11
MUMPS	31	3	1	1	0	2	1	2	3	0
PERTUSSIS	12	34	24	18	23	14	33	71	49	18
PLAGUE	0	0	0	0	0	0	0	0	0	0
POLIOMYELITIS	-	0	0	0	0	0	0	0	0	0
PSITTACOSIS	0	1	0	0	0	0	0	0	0	0
RABIES, ANIMAL	63	374	79	35	46	37	89	99	107	97
RABIES, HUMAN	0	0	0	0	0	0	0	0	0	0
RMSF	6	5	1	4	4	2	7	3	2	3

— This decrease reflects in part because of the lead data being presented differently in 2000. Please refer to P. 49.

TABLE 1. CASES OF REPORTABLE DISEASES BY YEAR IN KANSAS, 1991-2000

DISEASE	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
RUBELLA	1	4	0	0	1	0	0	36	0	0
RUBELLA, CONGENITAL	0	1	0	0	0	0	0	0	0	0
SALMONELLOSIS	245	304	299	397	363	419	446	363	333	378
SHIGELLOSIS	79	266	208	123	302	112	133	82	89	255
STREP. INVASIVE	0	0	0	0	0	0	1	16	15	30
SYPHILIS, P AND S	201	203	129	74	47	28	32	12	14	6
SYPHILIS, CONGENITAL	0	2	3	2	2	0	1	0	0	1
SYPHILIS, ALL STAGES	373	356	282	188	147	136	174	106	95	67
TETANUS	0	0	2	1	2	0	0	0	1	1
TOXIC SHOCK SYNDROME	8	9	3	5	2	5	1	4	5	6
TRICHINOSIS	0	0	0	0	0	0	0	0	1	0
TUBERCULOSIS	62	56	83	84	89	73	78	56	69	77
TULAREMIA	5	3	3	7	10	3	4	4	2	11
TYPHOID FEVER	0	1	1	2	1	1	2	0	1	1
TYPHUS	0	0	0	0	0	0	0	0	0	0
YELLOW FEVER	0	0	0	0	0	0	0	0	0	0

TABLE 2. CASES OF REPORTABLE DISEASES BY COUNTY IN KANSAS, 2000

	AL	AN	AT	BA	BB	BR	BT	BU	CA	CD	CF	CK	CL	CM	CN
AIDS/HIV	*	0	*	0	0	0	*	*	0	0	*	0	0	0	0
AMEBIASIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BRUCELLOSIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CAMPYLOBACTERIOSIS	1	0	0	0	4	0	9	4	2	1	0	2	3	2	1
CHLAMYDIA	18	4	21	3	27	14	50	73	1	8	7	12	68	0	2
CRYPTOSPORIDIOSIS	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
E. coli O157:H7	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
GIARDIASIS	2	1	3	0	2	0	1	4	0	0	0	1	2	0	0
GONORRHEA	1	1	8	0	4	1	11	8	0	1	1	4	12	0	0
H. influenzae, INVASIVE	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
HANTAVIRUS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEPATITIS A	7	0	0	0	0	0	2	0	0	0	0	0	1	0	0
HEPATITIS B, ACUTE	0	0	0	0	1	0	0	1	0	0	2	0	0	0	0
HEPATITIS B, CHRONIC	0	0	1	0	2	0	0	4	0	1	0	0	3	0	0
HEPATITIS C, ACUTE	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0
HEPATITIS C, CHRONIC	0	0	2	0	1	0	3	6	0	2	1	6	0	0	0
LEAD $ 10 :g/dL	0	0	0	1	8	0	0	0	0	0	0	8	1	0	0
LEGIONELLOSIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LYME DISEASE	0	0	2	0	0	0	0	2	0	0	0	2	0	0	0
MALARIA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEASLES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MENINGITIS, BACTERIAL	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MENINGOCOCCAL DISEASE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERTUSSIS	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RABIES, ANIMAL	5	1	0	0	0	1	3	9	0	0	1	0	1	0	0
RMSF	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
SALMONELLOSIS	1	0	1	0	1	0	6	9	3	0	0	5	4	0	1
SHIGELLOSIS	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0
STREP. INVASIVE	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
SYPHILIS, P AND S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SYPHILIS, ALL STAGES	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0
TETANUS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOXIC SHOCK SYNDROME	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TUBERCULOSIS	0	0	0	0	0	0	1	1	0	0	0	1	2	0	0
TULAREMIA	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
TYPHOID FEVER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*Counties which reported fewer than 5 cases. Not reported to protect confidentiality.

TABLE 2. CASES OF REPORTABLE DISEASES BY COUNTY IN KANSAS, 2000

	CQ	CR	CS	CY	DC	DG	DK	DP	ED	EK	EL	EW	FI	FO	FR
AIDS/HIV	0	*	0	0	0	*	0	0	0	0	0	0	0	*	5
AMEBIASIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BRUCELLOSIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CAMPYLOBACTERIOSIS	0	6	2	3	3	22	2	2	3	0	10	0	4	8	3
CHLAMYDIA	0	90	4	3	0	276	23	11	1	1	64	3	138	95	36
CRYPTOSPORIDIOSIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E. coli O157:H7	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
GIARDIASIS	1	1	1	2	0	8	7	0	0	0	1	0	2	3	3
GONORRHEA	1	14	1	0	0	82	5	5	0	0	7	0	19	5	6
H. influenzae, INVASIVE	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
HANTAVIRUS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEPATITIS A	0	2	0	0	0	3	0	0	1	0	0	0	0	7	3
HEPATITIS B, ACUTE	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
HEPATITIS B, CHRONIC	0	2	0	0	0	15	1	1	0	0	0	0	21	3	2
HEPATITIS C, ACUTE	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
HEPATITIS C, CHRONIC	0	0	1	1	0	45	1	0	0	0	17	0	9	14	3
LEAD $ 10 :g/dL	0	0	0	1	0	0	0	1	0	1	0	0	3	1	0
LEGIONELLOSIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LYME DISEASE	0	1	0	0	0	2	0	1	0	0	0	0	0	0	0
MALARIA	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0
MEASLES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MENINGITIS, BACTERIAL	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
MENINGOCOCCAL DISEASE	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
PERTUSSIS	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
RABIES, ANIMAL	1	6	0	0	0	2	1	0	0	1	0	0	0	0	0
RMSF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
SALMONELLOSIS	1	6	1	2	0	14	3	2	0	0	5	0	13	3	3
SHIGELLOSIS	0	0	1	0	0	2	2	0	0	0	0	0	11	1	0
STREP. INVASIVE	0	0	0	0	0	3	0	0	0	0	0	0	2	0	0
SYPHILIS, P AND S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SYPHILIS, ALL STAGES	0	0	0	0	0	3	0	0	0	0	0	2	5	6	0
TETANUS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOXIC SHOCK SYNDROME	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TUBERCULOSIS	0	2	0	0	0	1	0	0	0	0	0	0	1	1	0
TULAREMIA	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
TYPHOID FEVER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*Counties which reported fewer than 5 cases. Not reported to protect confidentiality.

TABLE 2. CASES OF REPORTABLE DISEASES BY COUNTY IN KANSAS, 2000

	GE	GH	GL	GO	GT	GW	GY	HG	HM	HP	HS	HV	JA	JF	JO
AIDS/HIV	*	0	0	0	0	0	0	0	0	0	0	*	0	0	35
AMEBIASIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BRUCELLOSIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CAMPYLOBACTERIOSIS	0	1	0	1	0	0	0	0	0	3	0	4	1	4	61
CHLAMYDIA	*255	1	5	0	20	5	2	1	6	12	0	55	16	11	454
CRYPTOSPORIDIOSIS	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1
E. coli O157:H7	0	0	0	0	0	1	0	0	0	0	0	0	0	0	6
GIARDIASIS	0	0	0	0	1	0	0	1	0	0	0	6	0	2	26
GONORRHEA	*105	0	0	0	1	1	0	0	0	0	0	2	5	6	139
H. influenzae, INVASIVE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
HANTAVIRUS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEPATITIS A	1	0	0	0	0	0	0	0	0	0	0	2	0	0	11
HEPATITIS B, ACUTE	0	0	0	0	0	1	0	0	0	0	0	2	0	0	3
HEPATITIS B, CHRONIC	1	0	0	0	1	0	0	0	0	1	0	2	0	0	74
HEPATITIS C, ACUTE	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
HEPATITIS C, CHRONIC	2	0	0	0	0	0	0	0	0	1	0	7	0	7	60
LEAD $ 10 :g/dL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
LEGIONELLOSIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
LYME DISEASE	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
MALARIA	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
MEASLES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MENINGITIS, BACTERIAL	1	0	0	0	0	0	0	0	0	1	0	0	0	0	6
MENINGOCOCCAL DISEASE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
PERTUSSIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
RABIES, ANIMAL	0	1	0	0	0	3	0	0	0	0	0	6	0	1	0
RMSF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SALMONELLOSIS	9	0	2	1	4	1	1	1	3	1	1	0	1	2	65
SHIGELLOSIS	3	0	0	0	0	0	0	0	0	0	0	3	0	1	45
STREP. INVASIVE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
SYPHILIS, P AND S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
SYPHILIS, ALL STAGES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
TETANUS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOXIC SHOCK SYNDROME	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
TUBERCULOSIS	2	0	0	0	2	0	0	0	1	0	0	0	0	0	12
TULAREMIA	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TYPHOID FEVER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*Counties which reported fewer than 5 cases. Not reported to protect confidentiality.

TABLE 2. CASES OF REPORTABLE DISEASES BY COUNTY IN KANSAS, 2000

	JW	KE	KM	KW	LB	LC	LE	LG	LN	LV	LY	MC	ME	MG	MI
AIDS/HIV	0	0	*	0	0	0	0	0	0	9	0	*	0	*	0
AMEBIASIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BRUCELLOSIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CAMPYLOBACTERIOSIS	0	1	0	2	4	2	0	0	0	9	0	0	1	1	3
CHLAMYDIA	0	9	6	1	39	2	1	1	8	113	90	6	5	50	19
CRYPTOSPORIDIOSIS	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
E. coli O157:H7	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
GIARDIASIS	0	0	2	0	1	3	0	0	0	7	2	2	1	4	10
GONORRHEA	0	2	0	0	7	0	0	0	0	60	17	3	3	17	3
H. influenzae, INVASIVE	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
HANTAVIRUS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEPATITIS A	0	0	0	0	3	0	0	0	0	0	0	0	0	2	0
HEPATITIS B, ACUTE	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
HEPATITIS B, CHRONIC	0	0	0	0	4	0	0	0	0	16	4	0	0	2	2
HEPATITIS C, ACUTE	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
HEPATITIS C, CHRONIC	0	0	0	0	1	0	0	1	0	10	5	0	0	5	1
LEAD $ 10 :g/dL	0	0	0	0	0	0	0	0	0	0	2	0	0	4	0
LEGIONELLOSIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LYME DISEASE	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
MALARIA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEASLES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
MENINGITIS, BACTERIAL	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0
MENINGOCOCCAL DISEASE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERTUSSIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
RABIES, ANIMAL	0	0	2	0	0	0	0	0	0	0	7	0	0	0	0
RMSF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SALMONELLOSIS	1	3	0	1	6	0	3	4	3	10	2	2	1	1	5
SHIGELLOSIS	0	0	0	0	0	0	0	0	0	18	0	0	0	0	2
STREP. INVASIVE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SYPHILIS, P AND S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SYPHILIS, ALL STAGES	0	0	0	0	0	0	0	0	0	2	0	0	1	2	0
TETANUS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOXIC SHOCK SYNDROME	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0
TUBERCULOSIS	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
TULAREMIA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TYPHOID FEVER	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

*Counties which reported fewer than 5 cases. Not reported to protect confidentiality.

TABLE 2. CASES OF REPORTABLE DISEASES BY COUNTY IN KANSAS, 2000

	MN	MP	MR	MS	MT	NM	NO	NS	NT	OB	OS	OT	PL	PN	PR
AIDS/HIV	*	0	0	0	0	0	0	0	*	0	*	0	0	*	0
AMEBIASIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
BRUCELLOSIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CAMPYLOBACTERIOSIS	5	4	3	1	2	1	1	0	2	1	3	0	0	1	2
CHLAMYDIA	10	25	6	6	4	7	17	2	2	3	14	4	4	8	19
CRYPTOSPORIDIOSIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E. coli O157:H7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GIARDIASIS	0	4	0	2	0	1	1	0	0	0	0	0	0	2	3
GONORRHEA	0	12	1	0	0	1	1	0	1	0	1	3	0	0	0
H. influenzae, INVASIVE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HANTAVIRUS	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
HEPATITIS A	0	0	1	0	0	0	16	0	0	0	0	0	0	0	0
HEPATITIS B, ACUTE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEPATITIS B, CHRONIC	1	2	0	0	0	1	1	0	0	0	0	0	0	1	0
HEPATITIS C, ACUTE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEPATITIS C, CHRONIC	2	3	0	1	1	0	0	0	0	0	0	1	0	0	2
LEAD $ 10 :g/dL	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
LEGIONELLOSIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
LYME DISEASE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MALARIA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEASLES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MENINGITIS, BACTERIAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MENINGOCOCCAL DISEASE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERTUSSIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RABIES, ANIMAL	5	0	0	0	0	1	0	0	0	0	0	0	0	1	0
RMSF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SALMONELLOSIS	0	1	1	0	0	0	4	0	1	0	0	0	0	3	0
SHIGELLOSIS	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
STREP. INVASIVE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SYPHILIS, P AND S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SYPHILIS, ALL STAGES	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0
TETANUS	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
TOXIC SHOCK SYNDROME	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TUBERCULOSIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TULAREMIA	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
TYPHOID FEVER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*Counties which reported fewer than 5 cases. Not reported to protect confidentiality.

TABLE 2. CASES OF REPORTABLE DISEASES BY COUNTY IN KANSAS, 2000

	PT	RA	RC	RH	RL	RN	RO	RP	RS	SA	SC	SD	SF	SG	SH
AIDS/HIV	*	0	0	0	9	9	0	0	0	*	0	0	0	109	0
AMEBIASIS	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
BRUCELLOSIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CAMPYLOBACTERIOSIS	2	0	1	0	6	5	1	0	0	3	3	0	1	33	1
CHLAMYDIA	14	0	7	0	175	115	9	2	6	106	1	1	3	1529	8
CRYPTOSPORIDIOSIS	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
E. coli O157:H7	1	0	0	0	1	2	0	0	0	0	2	0	2	2	1
GIARDIASIS	0	1	1	0	4	13	0	0	0	5	0	0	0	29	0
GONORRHEA	2	0	0	0	31	36	1	0	0	49	0	0	0	695	1
H. influenzae, INVASIVE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HANTAVIRUS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEPATITIS A	0	0	0	0	0	3	0	0	0	0	0	0	0	14	0
HEPATITIS B, ACUTE	0	0	0	0	0	1	0	0	0	0	0	0	0	5	0
HEPATITIS B, CHRONIC	0	0	0	0	6	5	0	0	0	12	0	0	0	73	0
HEPATITIS C, ACUTE	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1
HEPATITIS C, CHRONIC	2	0	0	0	8	10	0	0	1	15	1	0	1	65	2
LEAD $ 10 :g/dL	0	0	0	0	4	0	0	0	1	0	0	0	2	4	0
LEGIONELLOSIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LYME DISEASE	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0
MALARIA	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
MEASLES	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
MENINGITIS, BACTERIAL	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0
MENINGOCOCCAL DISEASE	0	0	0	0	0	1	0	0	0	0	0	0	0	3	0
PERTUSSIS	0	0	0	0	1	0	0	0	0	0	0	0	0	4	0
RABIES, ANIMAL	18	0	5	0	3	2	0	1	0	0	0	0	0	6	0
RMSF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SALMONELLOSIS	1	0	0	2	12	9	1	1	5	8	0	0	0	54	0
SHIGELLOSIS	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0
STREP. INVASIVE	1	0	0	0	2	0	0	0	0	2	0	0	0	7	0
SYPHILIS, P AND S	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
SYPHILIS, ALL STAGES	0	0	0	0	3	1	1	0	0	0	0	0	0	10	0
TETANUS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOXIC SHOCK SYNDROME	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
TUBERCULOSIS	1	0	0	0	3	0	0	0	0	0	0	0	0	28	0
TULAREMIA	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0
TYPHOID FEVER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*Counties which reported fewer than 5 cases. Not reported to protect confidentiality.

TABLE 2. CASES OF REPORTABLE DISEASES BY COUNTY IN KANSAS, 2000

	SM	SN	ST	SU	SV	SW	TH	TR	WA	WB	WH	WL	WO	WS	WY	TOTAL
AIDS/HIV	0	27	0	*	0	*	0	0	0	0	0	0	0	0	49	289
AMEBIASIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
BRUCELLOSIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
CAMPYLOBACTERIOSIS	0	29	0	4	2	0	5	1	0	2	0	1	0	0	34	355
CHLAMYDIA	3	495	4	25	7	39	8	9	3	2	2	15	5	3	1087	6057
CRYPTOSPORIDIOSIS	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	9
E. coli O157:H7	0	5	0	0	0	1	0	0	0	0	0	0	0	0	1	31
GIARDIASIS	0	10	0	0	0	0	0	0	0	0	0	0	1	0	15	205
GONORRHEA	0	335	0	3	1	7	0	2	0	1	0	1	0	0	1042	2795
H. influenzae, INVASIVE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
HANTAVIRUS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
HEPATITIS A	0	4	0	1	0	4	0	0	0	0	0	0	1	0	23	111
HEPATITIS B, ACUTE	0	3	0	1	0	0	0	0	0	0	0	0	0	0	2	27
HEPATTIIS B, CHRONIC	0	26	0	0	0	1	0	0	0	0	0	0	0	0	32	324
HEPATITIS C, ACUTE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
HEPATITIS C, CHRONIC	0	102	1	1	0	3	0	0	0	1	0	0	1	0	22	458
LEAD $ 10 :g/dL	0	7	0	1	0	0	0	0	0	0	0	1	2	0	4	61
LEGIONELLOSIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
LYME DISEASE	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	17
MALARIA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
MEASLES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
MENINGITIS, BACTERIAL	0	2	0	0	0	0	0	0	0	0	0	1	0	1	3	23
MENINGOCOCCAL DISEASE	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	11
PERTUSSIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	18
RABIES, ANIMAL	0	0	0	3	0	0	0	0	0	6	0	2	2	0	0	97
RMSF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
SALMONELLOSIS	2	28	0	3	0	2	0	0	0	3	1	1	0	2	16	378
SHIGELLOSIS	0	2	0	0	0	3	0	0	0	0	0	0	0	0	141	255
STREP. INVASIVE	0	2	0	0	1	0	0	0	0	0	0	0	0	0	8	30
SYPHILIS, P AND S	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	30
SYPHILIS, ALL STAGES	0	8	0	0	0	1	0	0	0	0	0	0	0	0	11	67
TETANUS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
TOXIC SHOCK SYNDROME	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6
TUBERCULOSIS	0	2	0	0	0	2	0	0	0	0	0	0	0	0	11	77
TULAREMIA	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	11
TYPHOID FEVER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

*Counties which reported fewer than 5 cases. Not reported to protect confidentiality.

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